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SEARCH OF MAJOR CHICOM SHIPYARDS
FOR EVIDENCE OF SUBMARINE
CONSTRUCTION

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CIA/PIR 65038

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SEARCH OF MAJOR CHICOM SHIPYARDS FOR EVIDENCE OF SUBMARINE CONSTRUCTION

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SEARCH OF MAJOR CHICOM SHIPYARDS FOR EVIDENCE
OF SUBMARINE CONSTRUCTION

SUMMARY

1. In response to Requirement No C-RR4-82,039 requesting a search of all available recent overhead photography of selected shipyards in Communist China for possible evidence of submarine (SS) construction, a study was made and the following salient observations noted:

a. The "G" Class ballistic missile submarine (SSB) first sighted in the water alongside commercial pier #4 (see Reference 1) at Dairen (Ta-Lien), China (38-55-44N 121-38-17E), on coverage dated [REDACTED] was, in fact, probably constructed on the center building way of the Dairen (Lu-Ta) Shipyard. Construction of a "G" Class SSB appeared to have begun prior to [REDACTED] the submarine was probably launched between [REDACTED] Throughout its construction a large portion of the submarine hull was covered by a combination of vertical screening, weather/concealment sheds, and possible matting. As far as can be determined by detailed analysis (see Reference 2), this submarine is nearly identical, with respect to outer dimensions and configuration, to the standard Soviet "G" Class ballistic missile submarine. The "G" Class SSB was last sighted at Dairen on coverage dated [REDACTED] in the same position as [REDACTED]

b. No evidence of the construction of a second "G" Class SSB was noted in a review of all coverage from [REDACTED] to the present of all major shipyards in Dairen, Shanghai, Wu-Chang, and Kuang-Chou (Canton), China (Figure 1). On [REDACTED] coverage of Dairen, probable vertical screen sections were again noted near the center building way of Lu-Ta Shipyard. These screens had previously been sighted only in connection with the construction of the "G" Class SSB on this building way; they were not present on photo coverage of Dairen dated [REDACTED]

c. "W" Class submarine construction is continuing at the Kiang-nan Shipyard, Shanghai, China (31-11-53N 121-29-05E). [REDACTED] coverage of [REDACTED] revealed one probable "W" Class SS on a building way and four probable "W" Class hull sections in the staging area at the head of the building ways. [REDACTED] coverage of [REDACTED] revealed one probable "W" Class SS on a building way and an unidentified 200-foot object on the adjacent building way; it is quite possible that this second unidentified object was the assembled submarine hull sections previously sighted in the staging area.

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d. [] coverage of the Wu-Chang Shipyard, Wu-Chang, China (30-31-55N 114-17-00E), dated [] revealed one probable "W" Class SS on a building way. The submarine was nearly completely covered, except for its sail, []. Another unidentified vessel under similar sheds on an adjacent building way was observed on this coverage. [] coverage of [] revealed one possible submarine (length-overall (LOA), approximately 250 feet) along the inner side of the fitting-out barge and an unidentified object, approximately 260 feet LOA, on a different building way from those on which the probable "W" Class SS and the shed-covered unidentified vessel were observed on the [] photography. Two possible submarines (LOA of each, approximately 260 feet) were identified at Wu-Chang on [] photography []. These two possible submarines were located on different building ways from those on which the probable "W" Class SS and the unidentified shed-covered vessel were seen in [].

f. Of additional possible significance was the presence at International Dockyard, Shanghai, China (31-15-15N 121-32-41E), on coverage dated [] of a possibly modified, probable "P-6" hull (possibly about to be outfitted with an unidentified rectangular object approximately [] in length) and an unidentified vessel, LOA 125 feet, bearing a marked similarity to the Chicom "Osa" Class PTFG (minus missile launchers). Reference 3 states that the "Komar" Class PTG is outfitted with missile launcher covers []. The unidentified 125-foot vessel at Shanghai was similar in several respects (hull and bridge house configuration; LOA of vessel) to the Chicom "Osa" Class PTFG. Although no missile launchers were seen on this boat, a large white area, or platform, on the after part of the vessel appeared to compare favorably in length, although not with the exact positioning, of such launchers on the Chicom "Osa" Class PTFG.

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2. All best-quality cloud-free coverage flown over these four areas between [] was utilized in the course of this study. This included a combined total of ten [] missions over Dairen; [] missions over Kuang-Chou (Canton); [] missions over Shanghai; and [] missions over Wu-Chang. In every instance of usable coverage of the major shipyards in these areas, interpretation was accomplished by the employment of stereo photography when available. A total of 16 yards and/or sites were examined in the course of this study. More than 60 different instances of stereo coverage (over half of which were [] were employed; in several instances where conventional stereo was unavailable, false stereo was utilized.

3. The cutoff date for all materials used in this report is []. For purposes of this study no [] coverage prior to [] was utilized since much better quality, larger scale [] photography was available during this period.

4. All measurements on this project, with the exception of the "G" Class SSB at Dairen, have been made by the CIA/IAD project analysts. They should not be construed as being mensuration data compiled by the NPIC Technical Intelligence Division. All measurements pertaining to the "G" Class SSB have been made by the NPIC Technical Intelligence Division and are considered accurate to within plus or minus [] whichever is greater.

The mensural analysis of the Kiangnan Yard was performed in consultation with NRTSC, DIAAP-1P3, and NPIC/PAG. Differences in interpretation have been noted.

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CHRONOLOGY

DAIREN (TA-LIEN) SHIPYARD COMPLEX

LU-TA SHIPYARD

38-55-44N 121-38-17E

FIGURES 2 AND 3

A cylindrically shaped object (subsequently evaluated as a section of a possible submarine hull), approximately 15 feet across its apparent diameter, was partially visible in its initial stages of construction on building way #2. Narrow flat "platforms", each approximately [redacted] were noted attached along each side of the cylindrical object. It could not be determined whether or not these "platforms" were in fact scaffolds. The visible length of the possible hull section was approximately [redacted] maximum possible LOA was approximately 70 feet.

A weather/concealment shed, approximately [redacted] covered that portion of the possible submarine hull closest to the water. High vertical security screens surrounded the shed and possible submarine hull on three sides, leaving only the side toward the head of building way #2 exposed. At least six large additional vertical security screen sections were noted stored at the foot of this building way.

Several large merchant vessels were observed in both graving docks, on building ways #1 and #3, and along the fitting-out mole. One US "LST-1" Class LST and one possible "Kaibokan I" Class PF were noted in the inner harbor.

FIGURE 4

A possible submarine hull, approximately 125 feet LOA, was observed protruding from beneath either end of a weather/concealment shed on building way #2. The maximum apparent beam visible at either end of the possible hull section was approximately [redacted]

High vertical security screens were positioned around three sides of the possible submarine hull. Three large merchant vessels were nested together across the foot of building way #2.

One "Gordyy" Class ODD was tied up outboard of the large mole. Graving dock #1 was occupied by one "Kronshtadt" Class PC and one possible "Kaibokan I" Class PF. One "LST-1" Class LST and three unidentified patrol craft were in the inner harbor. Several large merchant ships were located in the water and in the remaining building ways and graving dock #2.

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Construction of a small peaked-roof building with a high rectangular loft-like structure adjoining one side was observed to have been nearly completed directly at the head of building way #2. This structure was only partially constructed on the preceding coverage.

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FIGURE 5

A "G" Class ballistic missile submarine was noted in a relatively advanced stage of construction on building way #2. The submarine's extended bow planes and a large vertical shear (possibly the snorkel intake mast) were readily visible on this photography. Portions of scaffolding along each forward edge of the submarine were also observed.

High vertical security screens were positioned across the stern and two-thirds of the way along each side of the submarine. Possible camouflage matting or protective plating (not deck plating) covered most of the after deck of the submarine. A weather/concealment shed, approximately [REDACTED] covered the amidships section of the hull.

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Three probable "Shanghai" Class PTF hulls and two probable "Mk-6" Class ICM were observed under construction on building way #3. This was the first time either of these classes of naval vessel had been observed under construction at this yard. Seven probable "Mk-6" Class ICM were noted in the water along the quay by the very large fabrication building. Two "Kronshtadt" Class PC were in the inner harbor. Building way #3 also contained two probable tugboats under construction. A large merchant ship was nearly completed on building way #1. Graving dock #2 contained one probable "Shanghai" Class PTF, one unidentified small craft, and one large merchant vessel; graving dock #1 contained a possible "Kaibokan I" Class PF and two unidentified small craft. Nine large and several smaller merchant vessels were observed in the inner harbor and along the large fitting-out mole.

Construction of the small peaked-roof building (containing the high rectangular structure on one side) at the head of way #2 appeared to have been completed.

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FIGURE 6

A "G" Class SSB was observed in an advanced stage of construction on building way #2. It was noted that the visible forward section of the sail was open toward the bow - as well as above - indicating that the vessel was not yet ready for launching.

The high vertical security screens noted along three sides of the submarine on the last prior coverage were still in place. A weather/concealment shed [REDACTED] covered the amidships section of the submarine.

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Possible camouflage matting over the after deck of the submarine was again noted.

Six probable "Shanghai" Class PTF hulls and 10 probable "Mk-6" Class LCM were observed under construction on way #3. Building way #1 was empty. Two "Kronshtadt" Class PC and one "Kaibokan I" Class PF were observed in the inner harbor. Eleven large and several small merchant vessels were noted in the harbor area, along the mole, and in both graving docks.

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FIGURE 7

A probable "G" Class SSB was observed on building way #2.

Security screens were observed on at least two sides of the submarine. (It should be noted that without prior identification of the "G" Class SSB on this building way, the imagery visible on this very small scale [redacted] photography could have easily been mistaken for a merchant vessel under construction. Intensive application of various PI, mensural, and plotting techniques resulted in the subsequent identification of the submarine, submarine sail, and security screens which were present on building way #2 on earlier larger-scale [redacted] photography.)

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A probable "Gordyy" Class ODD was located outboard of the large mole. Unidentified small craft were visible on building way #3; a possible small floating drydock was under construction on way #1. (No previous drydock construction was noted at this yard.) A large merchant ship was visible in graving dock #2; graving dock #1 contained a smaller unidentified vessel. Seven large merchant ships and several smaller unidentified vessels were observed in the inner harbor and alongside the large mole.

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FIGURE 8

A possible "G" Class SSB was observed on building way #2.

Shadow patterns suggested that the vertical security screens were still in position although the small scale of the photography precluded the identification of screens per se.

A probable "Gordyy" Class ODD was observed alongside the large mole. Building way #3 was completely empty. At least two unidentified small vessels were under construction on way #1; the small floating dock previously constructed on this way was observed alongside the head of the large fitting-out mole. Activity within each graving dock could not be identified. Two large and two medium merchant ships were tied up along the outboard side of the fitting-out mole. No large merchant ships were visible within the inner harbor.

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It should be noted that the marked decrease in merchant ship activity in and around the Lu-Ta yard appeared at this time to coincide with the beginning of an apparent emphasis on naval construction and repair (Figures 10 and 11).

FIGURE 9

A "G" Class SSB was observed in a possible launching cradle along the inner side of the fitting-out mole.

Building way #2 was completely empty, indicating that the "G" Class SSB built here was launched between [] since the first sighting of a possible submarine hull on this way occurred in [] total keel-to-launch construction time was probably a little over 27 months. Small unidentified vessels were observed under construction on building ways #1 and #3. An unidentified vessel occupied graving dock #1; graving dock #2 was flooded and unoccupied. Two probable "Gordyy" Class ODD were tied up along the outboard side of the fitting-out mole. One large merchant ship and one smaller unidentified vessel were berthed in the inner harbor. The small floating drydock previously sighted at Dairen was observed alongside commercial pier #4 opposite the shipyard.

FIGURE 10

A completed "G" Class SSB was observed berthed alongside commercial pier #4 opposite the shipyard. A detailed photo/mensural analysis of this submarine revealed it to be nearly identical to the standard Soviet "G" Class with respect to outer dimensions and visible configuration (Reference 2).

No camouflage activity was discernible in any part of the shipyard at this time.

Building way #2 (on which a "G" Class SSB was noted under construction on previous photo coverage) was observed to contain three probable PTF hulls, possibly "Shanghai" Class, and $3\frac{1}{2}$ possible tugboat/trawler hulls. Five possible small tugboat/trawler hull sections were located in the staging areas just above the head of building way #2. Building way #1 contained one possible tugboat/trawler and one small barge. Numerous small pieces of construction materials - none of which could be identified as submarine-associated - were noted in the large staging area at the head of building way #1. Building way #3 contained $6\frac{1}{2}$ probable "Shanghai" Class PTF hulls in various stages of construction and one medium tugboat/trawler. Nine probable "Mk-6" Class LCM were noted just north-east of building way #3. Both graving docks were flooded and unoccupied. Vessels in the water included three "Gordyy" Class ODD, one "W" Class SS, one "Shanghai" Class PTF by the fitting-out mole, two probable and eight possible "Mk-6" Class LCM, and two large merchant ships.

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All completed PTF hulls evaluated as probable "Shanghai" Class were determined to be approximately [redacted] The provisional drawing for this class found in Reference 4 indicates a LOA of 120 feet. In view of the provisional nature of the information in ONI 32-8A, it believed that these vessels were probably of the "Shanghai" Class, since topside detail appeared identical to the above-deck configuration visible on this class on ground photography.

FIGURE 11

A completed "G" Class SSB was again observed in the identical position alongside commercial pier #4 as was the "G" Class seen on the coverage [redacted] No identifiable submarine construction was noted in the shipyard.

Five probable vertical screen sections, positioned variously at right angles to one another, were placed out in the open (apparently for storage purposes) in the staging area at the head of building way #3. An additional two probable security screens were observed placed at right angles to a third probable vertical screen on the northernmost corner of the center building way (way #2). It was noted that these probable vertical screens appeared to correspond roughly in length, height, and general configuration to those previously sighted (especially those observed [redacted] In all instances of previous coverage of Dairen, vertical security screening was noted only in connection with assembly of the "G" Class submarine. The probable screens observed at the very head of way #2 in [redacted] would appear to effectively hide any ground/sealevel view from the north toward the head of this way. On the [redacted] coverage it was noted that the northern sector was the only one from which the head of building way #2 could have been observed on the ground/water, since vision from all other sectors toward way #2 had been effectively blocked by buildings or vessels on the ways.

Building way #2 (where a "G" Class SSB was previously sighted under construction) contained five probable "Shanghai" Class PTF hulls and four small tugboat/trawler hulls under construction. Four probable tugboat/trawler hull sections were observed in the staging area at the head of building way #2. Two small merchant hulls were under construction on way #1. Five probable "Shanghai" Class PTF hulls and one medium tugboat/trawler were under construction on building way #3. One small merchant ship and one probable barge were observed in graving dock #1. Graving dock #2 was occupied by a large merchant vessel and two unidentified small craft. Vessels in the water included three "Gordy" Class ODD, one "W" Class SS, three "Shanghai" Class PTF, 21 probable "Mk-6" Class ICM, and one large merchant ship.

No evidence of the continuation of "Mk-6" Class ICM construction was evident at the Lu-Ta shipyard on this photography.

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KUANG CHOU (CANTON) SHIPYARD COMPLEX

HUANG-PU NAVAL BASE AND SHIPYARD

23-05-00N 113-24-45E

No evidence of submarine construction or submarine activity was observed on photo coverage of this shipyard/naval base from

FIGURE 13

No evidence of any weather/concealment sheds or of any possible camouflage activity was observed on any of the building ways.

A small probable oiler was observed in a nearly completed state of construction on the westernmost building way. Numerous small unidentified merchant craft were observed on the remaining building ways. One medium and one small unidentified surface craft were noted in the graving dock. No identifiable naval vessels were observed at the operating base.

The roof of a large fabrication-type building under construction was nearly two-thirds completed within a large cleared area on the westernmost tip of Whampoa Island. Supports for a second large building were also observed within the large cleared area, as were large quantities of construction materials. A small steel plant was located east of the naval base; however, no raw materials or finished products were in evidence near this installation.

FIGURES 14-16

A series of small weather sheds and/or camouflage huts (approximately 180 feet long by 25 feet wide) were placed over the westernmost building way. The sheds were placed too closely together to determine the existence of vessel(s) beneath them. A small unidentified surface craft was visible protruding from beneath a small weather/concealment shed on the easternmost building way. Several weather/concealment hut sections were stored at the head of the building ways. It should be noted that no sheds have been identified covering any of the building ways on past coverage.

Several small unidentified surface craft were observed on the center building ways of the shipyard. The graving dock contained a possible ship cradle under construction. Vessels in the water near the shipyard included one possible "T-43" Class MSF, one "Shanghai" Class PTF, and one

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unidentified canvas-covered patrol craft, approximately 130 feet LOA (it was noted that the after end of this vessel contained objects similar in shape to "Osa" Class PTFG launchers, but no identification or meaningful measurements could be made because of the canvas). Ships in the water by the graving dock included a probable "Castle" Class PF and one US "LST-1" Class LST. Vessels along the quay by the possible small-boat repair yard at the eastern end of the naval base included one probable "Kronshtadt" Class PC, a "Swatow" Class PGM, and two possible "Whampoa" Class YP. An additional "Swatow" was on a newly constructed repair ramp.

The large fabrication building previously observed under construction on the western tip of Whampoa Island was observed to be nearly completed and to contain four bays. A large two-bay building has also been constructed within the large cleared area. Each of these buildings measures roughly 190 feet wide by 380 feet long. Large quantities of construction materials were noted between the two buildings. A possible small-boat repair yard was under construction near the small steel plant at the eastern edge of the naval base.

Analysis of [] missions between [] covering the Huang-Pu Naval Base and Shipyard did not reveal any significant additional intelligence not already derived from the comparative analysis already described. [] did not reveal any evidence of naval combatant construction at the shipyard. Two possible small oilers and several smaller merchant craft were on the building ways. No naval combatants were berthed alongside the quayed areas of either the shipyard or the naval base; one probable PF was dead in the water in midstream. The remaining coverage was of poor quality due to obliquity, small scale, or weather.

NEW SHIPYARD UNDER CONSTRUCTION

23-06-10N 113-18-45E

This shipyard was still in early stages of construction. No naval combatant activity has thus far been observed at this site.

FIGURE 17

The site of a future shipyard under construction was observed on this and several subsequent missions to contain farmland and probable agricultural storage buildings. Construction of the shipyard began between [] Analysis [] revealed that earth-grading has begun, although a launch channel had not yet been dug. No work had been started on the transverser way.

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FIGURE 18

A new shipyard, to contain approximately six building/repair ways on each side of the transverser table, was observed in a state of rapid construction. A transverser table foundation (approximately 510 feet LOA by 175 feet wide) and two building ways were nearly completed. Ground clearing for additional building ways and construction work on a submersible ship cradle similar to that at the Huang-Pu Shipyard (Whampoa Island) were well under way. The site is primarily served by water-borne carrier; there is no rail connection, and a small trail connects the site to the mainland. Transverser size limitations suggest that, should this yard produce naval craft, they would necessarily have to be in the minor combatant classes.

UNNAMED SHIPYARD

23-05-20N 113-27-45E

This small boatyard adjoins what was formerly a large boat basin. The basin has since been drained and converted to a large new probable graving dock under construction. No naval combatant activity has thus far been observed at this site.

FIGURE 19

Approximately 12 small uncovered building/repair ways contained various barges, river craft, and other small boats. Numerous unidentified small craft were nested in the boat basin.

Coverage in [] revealed that construction of one-half of one of the two retaining walls of the cofferdam across the mouth of the boat basin had been started. Completion of the cofferdam was first noted in []. Placement of fill between the cofferdam forms had not been completed. The water level on the inward side of the cofferdam was at river level; no evidence of pumping operations was observed. As of [] the cofferdam had been completed, and probable pumping operations had started. [] the basin floor had been pumped dry and possible construction materials appeared stacked on the floor toward the cofferdam; concrete forms had not yet been laid.

FIGURE 20

Small weather/concealment sheds, approximately 100 feet in length by 45 feet wide, covered several of the building/repair ways. These sheds were first observed in []

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An unidentified object, approximately 80 feet LOA, was observed on the southernmost exposed building way. No vessels were observed on any of the other exposed or covered ways. A medium freighter, a possible dredge, and several unidentified small craft were berthed at the L-head pier (the only pier serving the yard).

Extensive construction activity was observed at the site of the probable new graving dock. Forms for the dock floor were apparently in the process of being poured. Estimated bottom dimensions for the dock when completed were approximately 120 feet wide by 490 feet long (taken to the inner side of the probable position of the caisson wall).

HO NAN TAO SHIP REPAIR YARD

23-06-14N 113-17-58

No evidence of submarine construction or submarine activity was observed on photo coverage of this yard from [REDACTED]
[REDACTED] The yard facilities are not large enough to handle out-of-water repair to vessels over 235 feet LOA.

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FIGURE 21

Several unidentified small river craft were observed along three small pier areas and in the one small operational drydock. A second small graving dock appeared to be under construction just east of the first dock.

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FIGURE 22

Three of the four building/repair ways and both graving docks contained several small unidentified river craft. Two dredges, a floating derrick, several barges, and numerous medium and small river craft were moored in the immediate vicinity of the repair yard. Two large and two smaller river ferries were at anchor in the middle of the river.

Four building/repair ways, one graving dock, and several small shop buildings have been constructed at this yard since 1962. The maximum LOA of the graving dock is approximately 235 feet; the maximum LOA of the largest building/repair way is approximately 150 feet.

TUNG LANG SHIPYARD

23-04-30N 113-14-47E

No evidence of submarine construction or submarine activity was observed on photo coverage of this yard from [REDACTED]

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FIGURE 23

Several large and small merchant ships and river craft were observed on the building and repair ways, in the graving docks, and along breasting platforms protruding from the extensive quayage along the northeast edge of the yard.

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FIGURE 24

Graving docks and building and repair ways contained several small and medium merchant vessels. Numerous freighters, lighters, and small river craft were berthed along the extensive quayage.

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Several shop and fabrication buildings have been constructed since back from the river.

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SHANGHAI SHIPYARD COMPLEX

KIANGNAN SHIPYARD

31-11-53N 121-29-05E

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FIGURES 25-27

A total of eight submarine hull sections were visible on the staging area and at the foot of submarine building way #2. These included:

- (a) Five "W/R" Class hull sections, three sections resting on a cradle in the staging area directly at the head of building way #1 and two sections in cradles on the staging area at the head of and between the two submarine building ways.
- (b) Two unidentified submarine hull sections placed in a cradle at the head of way #1. Measurements derived for each of these two sections varied as follows: beam widths of [] 25 feet and LOAs [] respectively (NRTSC, DIAAP-1P3, and CIA/IAD); beam widths of [] and LOAs of [] 30 feet (NPIC/PAG). Configuration and tonal contrast visible on the longer of the two sections appeared similar to the aftermost possible submarine hull section observed protruding from a weather shed at the Lu-Ta Shipyard, Dairen, China, on Mission []
- (c) A single probable submarine hull section, placed on end, located at the foot of building way #2. The overall diameter of this circular outer section, which included four segmented compartments or tankage located within one-half of the rim, measured approximately [] The inner oval-shaped opening, less the segmented compartments and a small lip protruding inward from the opposite rim, measured approximately [] across its inner axis.

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Two stripped-down "W" Class SS were observed in graving dock #1 and one "W" Class was in graving dock #3. Two "W" Class SS were berthed alongside the fitting-out area.

25X1

FIGURE 28

An unidentified object (LOA undetermined due to heavy clouds) was observed on building way #1. Clouds covered building way #2. Three unidentified objects were seen in the staging area at the head of the ways. Two possible SS were observed in graving dock #1. Two possible "W" Class SS were observed at the fitting-out area. Heavy clouds and haze precluded any further analysis.

- 14 -

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TOP SECRET

25X1

CIA IMAGERY ANALYSIS DIVISION

FIGURE 29

Two unidentified objects of different lengths were observed on the two submarine building ways (one object on each way). Two unidentified objects were placed in graving dock #1 in the same positions as the "W's" previously noted in [REDACTED]. Poor quality precluded interpretation of imagery in the staging area at the head of the building ways.

FIGURE 30

Building way #1 was unoccupied. (The object previously noted on way #1 was first observed on [REDACTED] and last seen in [REDACTED] - a total of 9 months. Way #1 was last seen to be unoccupied in [REDACTED] or 18 months before this coverage.) Unidentifiable clutter was observed on building way #2. No identifiable hull sections were noted in the staging area. Graving dock #1 was observed to contain either four unidentified objects (CIA/IAD, DIAAP-1P3, and NPIC/PAG) or four possible midget submarines, each measuring approximately 100 feet [REDACTED] (NRTSC). Eight probable concealment huts, partially concealing these four objects/midget submarines, were observed at this dock. A possible "R" Class SS was first identified at the Klangnan fitting-out area on this coverage. A white spot on the bow and a raised shadow outline from the bow contributed to this evaluation.

FIGURE 31

A 250-foot possible SS was located on building way #2. Building way #1 was unoccupied. Four unidentified objects were observed in the staging area. Graving dock #1 contained a possible SS. Two possible SS were tied up at the fitting-out area. Haze degraded imagery within the entire shipyard area.

FIGURES 32 AND 33

A probable "R" Class SS was located on building way #2 (probably the same vessel as the possible SS observed on this way one month before). Way #1 was unoccupied. Four "W/R" Class submarine hull sections were placed in the staging area. Graving dock #1 contained a "W" Class SS in the same location as the possible SS sighted one month earlier. One "W" Class SS, two "S-1" Class SS, and one possible "R" Class SS were observed at the fitting-out area. The possible "R" Class SS was berthed against the inboard side of the barge. A possible bow sonar was visible on this boat. A 390-foot cargo ship was berthed alongside the fitting-out wharf.

25X1

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PIR - 05030

25X1

CIA IMAGERY ANALYSIS DIVISION

25X1

FIGURE 34

One probable "R" Class was observed on way #2 (in the same position as a probable "R" sighted 2½ months earlier). An unidentified object 200 feet long was located on way #1, and a 50-foot object was observed in the staging area. No submarines were observed in any of the graving docks. Clouds and cloud shadow obscured the fitting-out area.

HU-TUNG SHIPYARD

31-16-05N 121-33-48E

No evidence of submarine construction or activity was apparent on any photo coverage of this shipyard from

25X1

25X1

FIGURE 35

A separately secured area, occupying approximately half of three of the building ways, was observed. This area contained four small buildings and several probable weather sheds situated over the building ways.

All five of the building ways were occupied by non-naval vessels (one merchant ship and numerous small craft). A small merchant vessel and a large river boat (passenger) were berthed at the north fitting-out wharf. A US "LST-1" Class LST, four merchant ships, an unidentified naval vessel, a river boat (passenger), and miscellaneous small craft were tied up at the south fitting-out wharf.

25X1

FIGURE 36

Vertical security screening has been erected around the small basin formed by the north fitting-out wharf and the shore. The positioning of this screening was such as to permit little or no surveillance from either land or water. In the separately secured area of the building ways two possible "P-6" Class PT hulls were noted, one in the open and the other partially covered by a shedlike structure. Probable weather sheds were observed throughout this area.

The remaining building ways were observed to contain several barges, a merchant ship, and a possible dredge. At the north fitting-out area were four small barges and a fitting-out barge. Two probable "P-4" Class PT boats were berthed in the screened-off basin of the north fitting-out area. At the south fitting-out wharf a "Riga" Class DE, a probable "Kaibokan II" Class PF, a merchant ship, two river boats (passenger), and numerous small craft were noted.

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25X1

CIA IMAGERY ANALYSIS DIVISION

INTERNATIONAL DOCKYARD

31-15-15N 121-32-41E

No evidence of submarine construction was observed on any photo coverage. A "W" Class submarine, however, was observed berthed at the fitting-out wharf on coverage of [REDACTED]

FIGURE 37

Four probable "Shanghai" Class PTF were under construction on two of the six building ways. Three merchant ships and three unidentified small craft were under construction or repair on the remaining ways. A "Riga" Class DE occupied the graving dock. At the fitting-out wharf were berthed a probable "Shanghai" Class PTF, three probable "Swatow" Class PGM, the previously mentioned "W" Class SS, a probable oiler, a fitting-out barge and miscellaneous small craft.

FIGURE 38

A probable "P-6" Class PT hull, apparently without forward or after gun mounts, was located on the third building way from the launching basin. This boat appeared to be wider at the stern than the standard P-6. An unidentified object, approximately [REDACTED] LOA, was placed on a platform situated immediately astern of the probable "P-6" Class PT hull. It should be noted that the "Komar" Class PTG incorporates a pair of [REDACTED] launch tubes on a "P-6" hull. On the second building way (from the launching basin) an unidentified vessel was observed. This vessel measured approximately 125 feet LOA. In general hull configuration, location and configuration of the deckhouse, and location of what appeared to be the possible forward gun mount, this vessel closely resembled the "Osa" Class PTFG. A long, white, canvas covering, or platform, was observed almost to cover the after end of the boat. This white object was approximately 55 feet in length and ended approximately 5 feet from the stern. It should be noted that a photo/mensural study previously made of the Chicom "Osa" Class PTFG has revealed that the LOA for each missile launcher cover is [REDACTED] with a space between launchers of [REDACTED] for the total missile launcher section. The distance from the after edge of the aftermost launcher to the stern [REDACTED] feet. The LOA of the Chicom "Osa" was determined to be [REDACTED] versus the [REDACTED] for the Soviet "Osa" described in Reference 5. Given accuracy tolerances of plus or minus [REDACTED] for all of the above measurements on [REDACTED] photography, it is of possible significance that the LOA and the rough positioning from the stern of the unidentified white area, or platform, compare closely with the dimensions obtained on the missile launcher section of the Chicom "Osa" Class.

25X1

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CIA IMAGERY ANALYSIS DIVISION

Two merchant ships, a large unidentified vessel, a barge, and three unidentified small craft occupied the remaining building ways. A possible "Kronshtadt" Class PC, a merchant ship, and a barge were observed in the graving dock. A probable "P-6" Class PT was berthed at a small wharf in the launching basin. Observed at the fitting-out wharf were a "Riga" Class DE, a "Kaibokan II" Class PF, a possible "Castle" Class PF, two US "LST-1" Class LST, a probable oiler, four merchant ships, and three barges.

SHANGHAI DOCKYARD

31-15-05N 121-31-50E

No evidence of submarine construction or activity was observed on any coverage of this shipyard.

25X1

FIGURE 39

Three merchant vessels were noted, one in the large graving dock and two at the fitting-out quay. Two river boats (passenger) were also berthed at the fitting-out quay. A third similar river boat occupied the smaller graving dock.

25X1

FIGURE 40

A merchant ship and a large river boat (merchant/passenger) were tied up at the fitting-out wharf. A merchant vessel occupied the small graving dock. The larger dock, being under repair, was empty.

CHUNG HUA SHIPYARD

31-16-55N 121-33-28E

No evidence of submarine construction was observed on coverage of this shipyard.

25X1

FIGURE 41

Five small river craft were under construction on the ways. Two barges, a floating crane, and 13 river craft were observed at the fitting-out wharf.

25X1

FIGURE 42

Three probable barges were under construction on the ways. Numerous small barges and river craft were observed at the fitting-out wharf.

25X1

25X1

25X1

TOP SECRET

25X1

CIA IMAGERY ANALYSIS DIVISION

P'U TUNG SHIPYARD31-14-47N 121-30-00E

No evidence of submarine construction or activity was observed on coverage of this shipyard.

25X1

FIGURE 43

Three barges and two probable tugboats occupied all five of this small shipyard's building ways. A large merchant vessel was berthed at the fitting-out wharf.

25X1

FIGURE 44

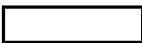
A large unidentified hull, possibly a river vessel, was under construction on the largest way. Except for two probable tugboats and a small boat, the remaining ways were utilized for the construction of a pontoon wharf. Two merchant ships were observed berthed at the fitting-out wharf. A second newly constructed pontoon wharf was tied end-to-end to the existing fitting-out wharf.

CH'IU-HSIN (KIOUSIN) SHIPYARD31-12-20N 121-29-50E

No evidence of submarine construction or activity was observed on any coverage of this shipyard.

25X4

FIGURE 45

A small barge and a possible patrol craft were noted on the building ways. A small merchant ship occupied the graving dock. In the fitting-out area were berthed two probable "Kronshtadt" Class PC, a possible  Class MSC (0), seven possible patrol craft, two barges and a possible merchant ship.

25X1

Pilings for a new quay were being set just north of the graving dock.

25X1

FIGURE 46

Two possible patrol craft and two probable barges were noted on the ways. A possible "Kronshtadt" Class PC occupied the graving dock. Eight possible patrol craft (approximately 110 feet LOA) and two possible patrol craft (approximately 135 feet LOA) occupied almost all of the available berthing spaces in the fitting-out areas.

The quay under construction on the previous coverage appeared to be complete.

TOP SECRET

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25X1

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PIR - 65030

25X1

CIA IMAGERY ANALYSIS DIVISION

TUNG-CHIA-TU DOCKYARD31-12-28N 121-30-12E

No evidence of submarine construction or activity was observed on coverage of this shipyard.

25X1

FIGURE 47

A large merchant ship was seen in the graving dock. An additional merchant vessel was berthed at the quay.

25X1

FIGURE 48

Two river boats occupied the graving dock, and three merchant ships were tied up at the quays.

PING-AN DOCKYARD31-11-59N 121-29-58E

No evidence of submarine construction or activity was observed on coverage of this yard.

25X1

FIGURE 49

Four barges were on the ways. Four small merchant vessels and two possible patrol craft were berthed at the offshore wharfs.

25X1

FIGURE 50

The building ways contained three river boats and a barge. Three small merchant vessels and five barges were observed at the offshore wharfs.

- 20 -

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25X1

TOP SECRET

CIA IMAGERY ANALYSIS DIVISION

WU-CHANG SHIPYARD COMPLEX

WU-CHANG SHIPYARD

30-31-55N 114-17-00E

FIGURES 51-53

A "W" Class submarine was located at the fitting-out barge. A total of eight possible hull sections were visible throughout the yard. Two of these sections were placed on their sides and located between the launching cradle and building way #1. Two sections protruded from beneath weather sheds at the head of building ways #1 and #2. The remaining four possible sections were placed on end in the western section of the shipyard on building way #7.

FIGURES 54 AND 55

A "W" Class submarine was berthed alongside the fitting-out barge. One of the two possible submarine hull sections was still located between the launching cradle and building way #1. The four possible upright hull sections previously seen in [] on building way #7 were not present. The dispersed weather sheds on building ways #1 and #2 observed in [] were placed together at the head of the building ways.

FIGURES 56 AND 57

A probable "W" Class submarine (partially covered by weather sheds) was visible on building way #1. This submarine had a sail visible between two of the weather sheds. Agreement could not be reached at this point as to the existence of a gun tub on the submarine, and the different opinions are as noted:

- (a) NPIC and CIA/IAD believe that a lack of verticality and marginal imagery preclude the identification of the imagery forward of the sail as being a gun tub and that it was more probably the space (on the deck level) within an elliptically cut-out scaffolding which was observed to cover the entire submarine and on which the weather sheds were placed.
- (b) NRTSC and DIAAP-1P3 believe that the imagery just forward of the sail was a probable gun tub - a characteristic of the earlier units of the "W" Class submarine.

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PIR - 65038

CIA IMAGERY ANALYSIS DIVISION

An unidentified vessel was on building way #2 and was covered by weather sheds similar to the sheds covering the submarine on building way #1. The IOA of the submarine and of the weather sheds on the unidentified vessel did not exceed 270 feet. Two possible submarine hull sections protruded from beneath weather sheds at the head of building ways #1 and #2. The positioning and the configuration of these sections were similar to the possible hull sections observed on the [] coverage. It could not be ascertained whether or not any of the possible submarine hull sections sighted in [] were actually incorporated into the probable "W" Class submarine on building way #1 or the shed-covered unidentified vessel on building way #2. The "W" Class submarine previously present at the fitting-out barge was not observed on this coverage. Way #5 (later determined to be two separate ways) was first observed to be completely covered at this time.

FIGURE 58

A possible submarine (IOA approximately 250 feet) was visible on building way #1. This vessel was probably the same vessel observed on this building way in [] and identified then as a probable "W" Class submarine. Building way #2 was empty with the exception of a few small pieces of unidentified equipment or material. Three previously observed large weather sheds at the head of this way remained in approximately the same positions as before. Building way #4 contained a 260-foot-long series of probable weather sheds. These probable weather sheds possibly were the same sheds that covered the unidentified vessel on building way #2 observed on the [] coverage. No submarines or 250-foot vessels were observed at the fitting-out barge.

FIGURE 59

The probable "W" Class submarine previously observed on building way #1 was no longer present. Whether this probable "W" Class submarine was the same as the 250-foot submarine on this coverage at the fitting-out barge could not be determined. The 260-foot-long series of probable weather sheds previously observed on building way #4 appeared unchanged.

FIGURE 60

The only significant changed observed on this very poor-quality photography consisted of unidentified activity at the head of building way #3 which had not been previously sighted.

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CIA IMAGERY ANALYSIS DIVISION

25XT

FIGURE 61

Building way #4 contained a probable submarine (approximate LOA 250 feet) with a possible sail visible. A 260-foot-long series of probable weather sheds was located at the head of building way #3. At the foot of this same building way was a concentration of unidentified clutter. An identification of vessels at the fitting-out barge was precluded by excessive clutter and by cloud shadow.

25X1

FIGURE 62

There was no significant change since [REDACTED] Poor contrast and haze precluded interpretation of the fitting-out area.

25X1

TOP SECRET

25X1

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TOP SECRET

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25X1

CIA IMAGERY ANALYSIS DIVISION

25X1

DOCUMENTS

1. NIS 39A, Supplement I, Section II (SECRET)
2. CIA/PIR-65029/65, "G" Class Submarine Construction (SECRET)
3. US NAVPIC DPIR No. 638/60-S, "USSR 'Komar' Class PTMG, Preliminary PI Analysis" (CONFIDENTIAL)
4. ONI 32-8A, "Naval Ships of Sino Soviet Bloc Less USSR" (SECRET)
5. PC 230/2-1, "Naval Ships of USSR" (SECRET)

Related Document

USNPIC 646/61-S, "USSR 'G' Class SSB - Photo Analysis" (SECRET)

REQUIREMENT

CIA. C-RR4-82,039

PROJECT

30519-5

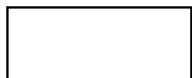
- 26 -

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25X1

25X1



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CTA/PTR-65038

MAJOR SHIPBUILDING AREAS
COMMUNIST CHINA

25X1

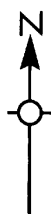
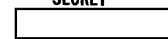


FIGURE 1

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CTA/PTR-65038

DAIREN (LU-TA) SHIPYARD
DAIREN, CHINA

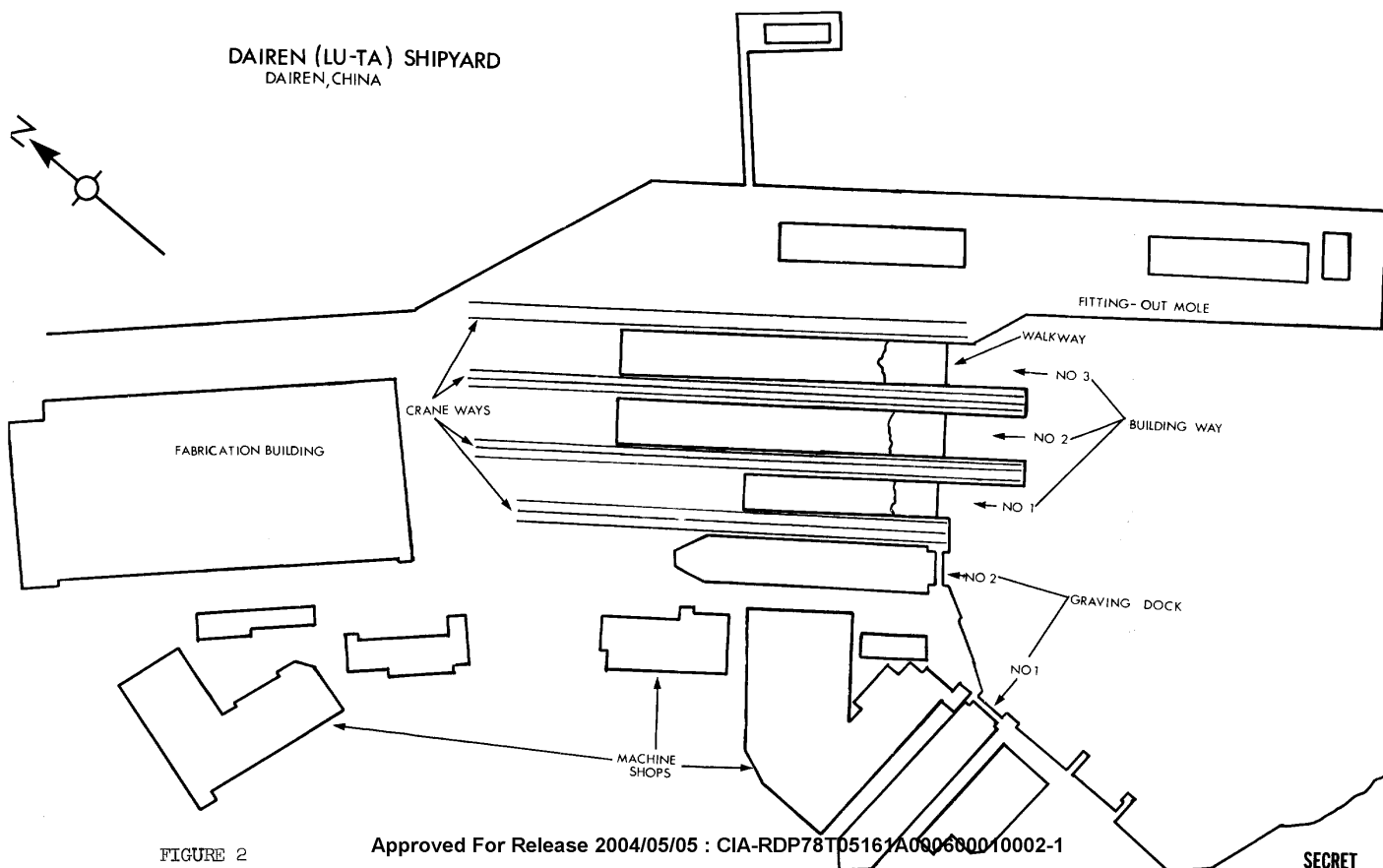


FIGURE 2

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25X1

Approved

DAIREN (JULIA) SHIPYARD
se 2004/05/05 : CIA-RDP78T0
DAIREN (TA-LEEN), CHINA
38-55-44N/121-38-17E

~~0600010002B1-65038~~

SECURITY SCREENS

WEATHER SHEET

POSSIBLE SUBMARINE HULL SECTION

FIGURE 3.

A

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25X1

DAIREN (LU-TA) SHIPYARD
DAIREN (TA-IEN), CHINA
38-55-44N/121-38-17E

SECURITY SCREENS

WEATHER SHED

POSSIBLE SUBMARINE HULL SECTION

FIGURE 4

SECRET

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0600010002-1-65038

DAIREN (LU-LIAI) SHIPYARD
DAIREN (TA-LIEN), CHINA
38-55-44N/121-38/17E

25X1

SECURITY SCREENS

POSSIBLE MATTING

WEATHER SHEDS

POSSIBLE SNORKEL
INTAKE MAST

BOW PLANES

SCAFFOLDING

"G" CLASS SSB

FIGURE 5

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25X1

25X1

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DAIREN (TA-LIN) SHIPYARD
DAIREN (TA-LIN) CHINA
38-55-44N/121-38-17E

165038

25X1

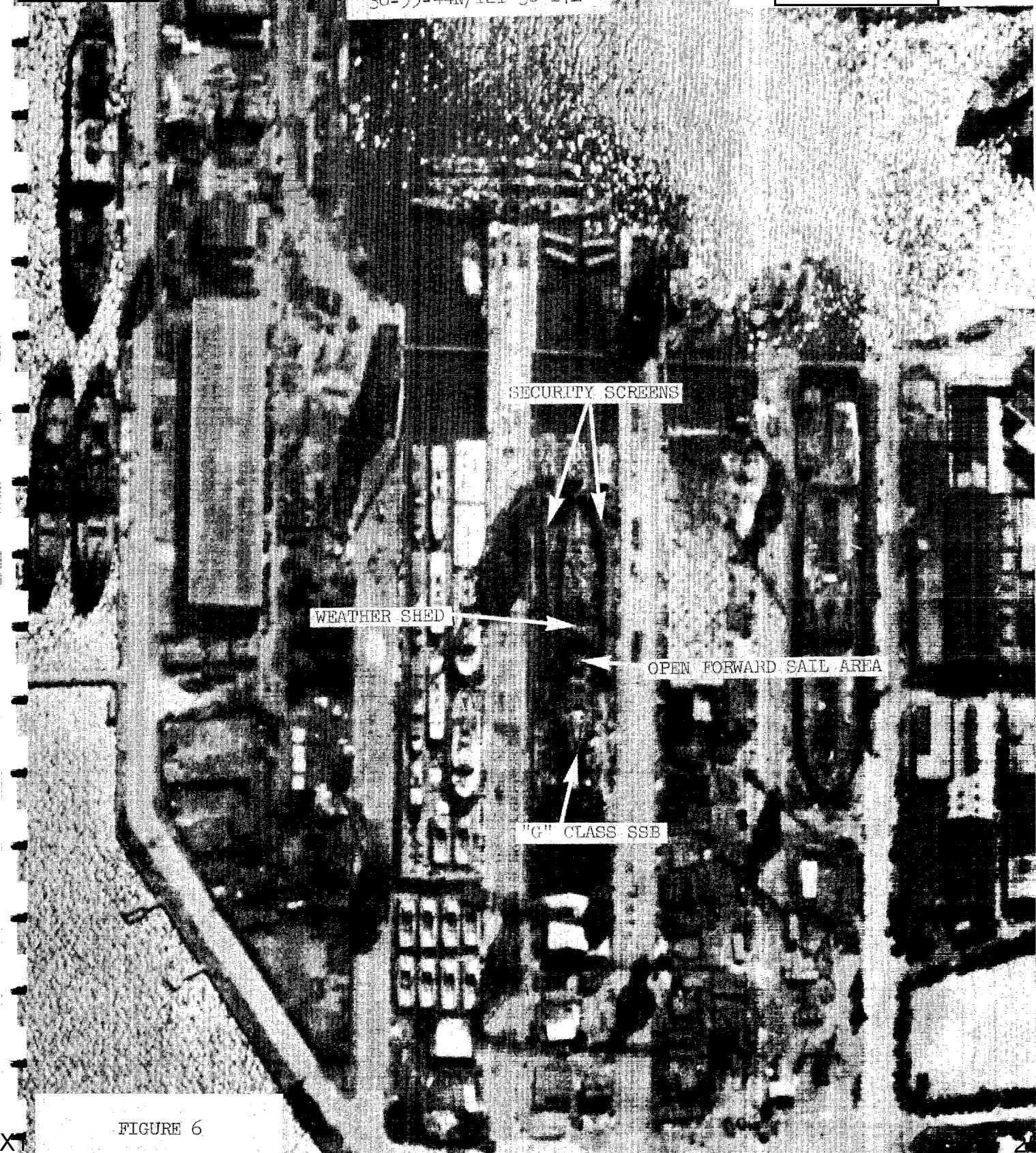


FIGURE 6

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2004/05/05 : CIA-RDP78T05164A000600010002-1

DAIREN (LU-TA) SHIPYARD
DAIREN (TA-LIEN), CHINA
38-55-44N/121-38-17E

CIA FILE 65038

25X1

PROBABLE "CORDYY" CLASS ODD

MERCHANT SHIPS

PROBABLE "G" CLASS SSB

MERCHANT SHIPS

POSSIBLE SMALL
FLOATING DRYDOCK U/C

SECURITY SCREENS

FIGURE 7

25X

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25X1

5X1

DAIREN (LU-TA) SHIPYARD
DAIREN (TA-LIEN), CHINA
38-55-44N/121-38-17E

CTA-PTB 65038

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PROBABLE "GORDYY" CLASS ODD

MERCHANT SHIPS

POSSIBLE "G" CLASS SSP

FIGURE 8

Approved For Release

25X1
25X

Approved For

004/05/05 : CIA-RDP78T05161A000600010002-15038

DAIREN (TA-LIEN), CHINA
38-55-44N/121-38-17E

25X1

SMALL FLOATING DRYDOCK

"G" CLASS SSB (IN POSSIBLE
LAUNCHING CRADLE)

MERCHANT SHIPS

2 PROBABLE "GORDYY" CLASS ODD

MERCHANT SHIP

EMPTY BUILDING WAY

FIGURE 9

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DAIREN (TA-LIEN), CHINA
38-55-44N/121-38-17E

ST/DT/CSA/28

"G" CLASS SSF

2 "GORDY" CLASS ODD

FLOATING DRYDOCK

"GORDY" CLASS OLD

MERCHANT SHIP

PROBABLE "W" CLASS SS

"SHANGHAI" CLASS PTF

9 PROBABLE "MK-6" CLASS
LCM U/C

63 PROBABLE "SHANGHAI"
CLASS PTF HULLS U/C

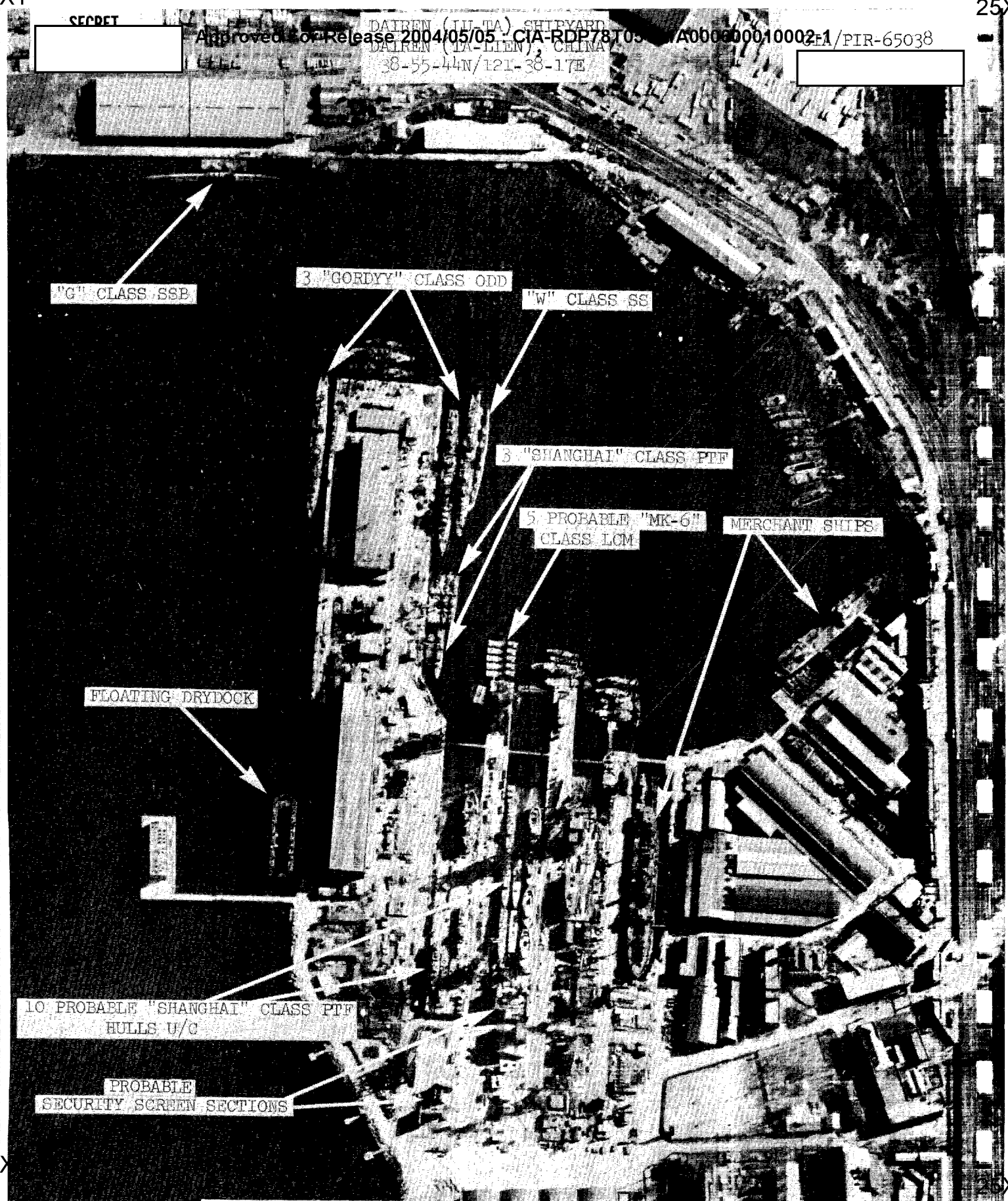
3 POSSIBLE "SHANGHAI"
CLASS PTF HULLS U/C

FIGURE 10

App

Approved For Release 2004/05/05 : CIA-RDP78T05161A000600010002-1

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SECRET

DAIREN (JH-TA) SHIPYARD
 Approved For Release 2004/05/05 : CIA-RDP78T051000600000000000-1
 DAIREN (JA-LIEN) CHINA
 38-55-44N/121-38-17E
 PIR-65038

"G" CLASS SSP

3 "GORDY" CLASS ODD

"W" CLASS SS

3 "SHANGHAI" CLASS PTF

5 PROBABLE "MK-6"
 CLASS LCM

MERCHANT SHIPS

FLOATING DRYDOCK

10 PROBABLE "SHANGHAI" CLASS PTF
 HULLS U/C

PROBABLE
 SECURITY SCREEN SECTIONS

Approved For Release 2004/05/05 : CIA-RDP78T051000600000000000-1
 FIGURE 11

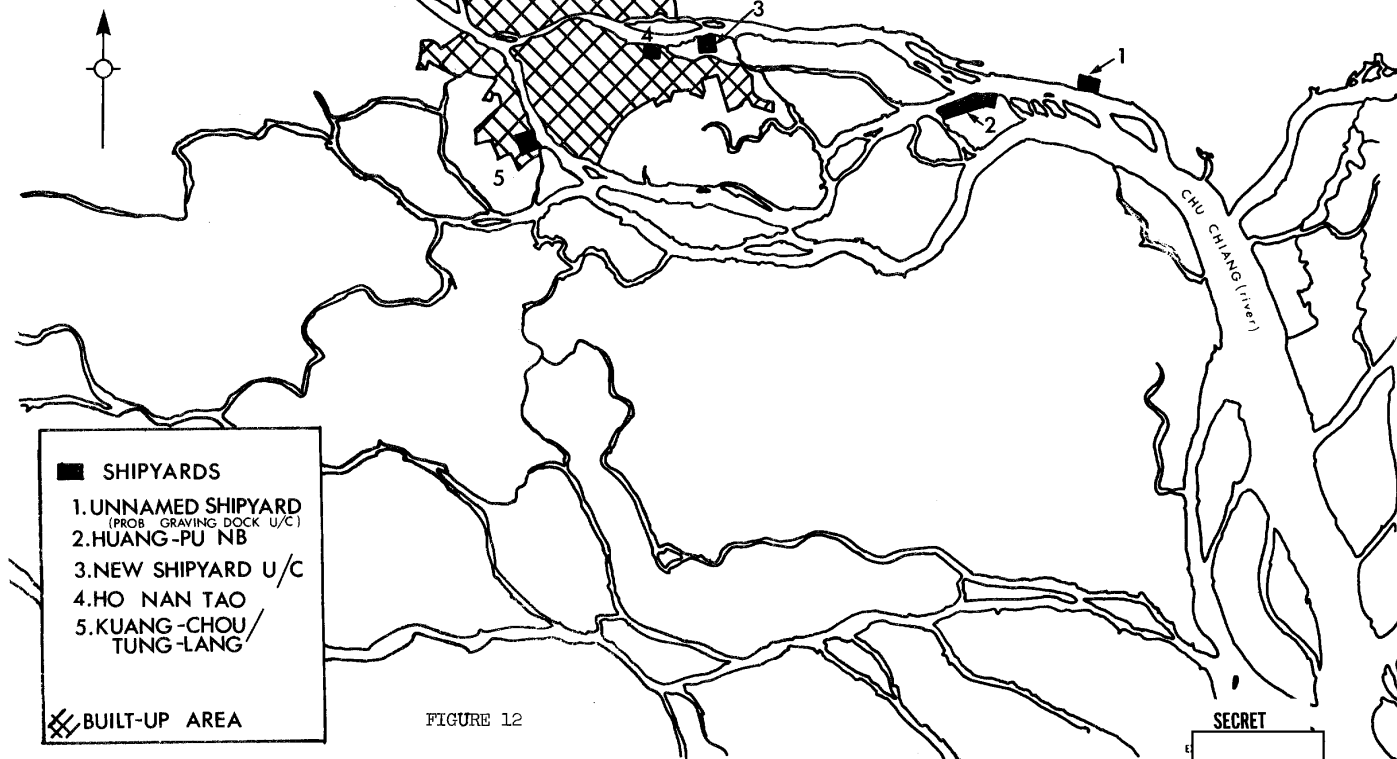
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Approved For Release 2004/05/05 : CIA-RDP78T05161A000600010002-1

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25X1

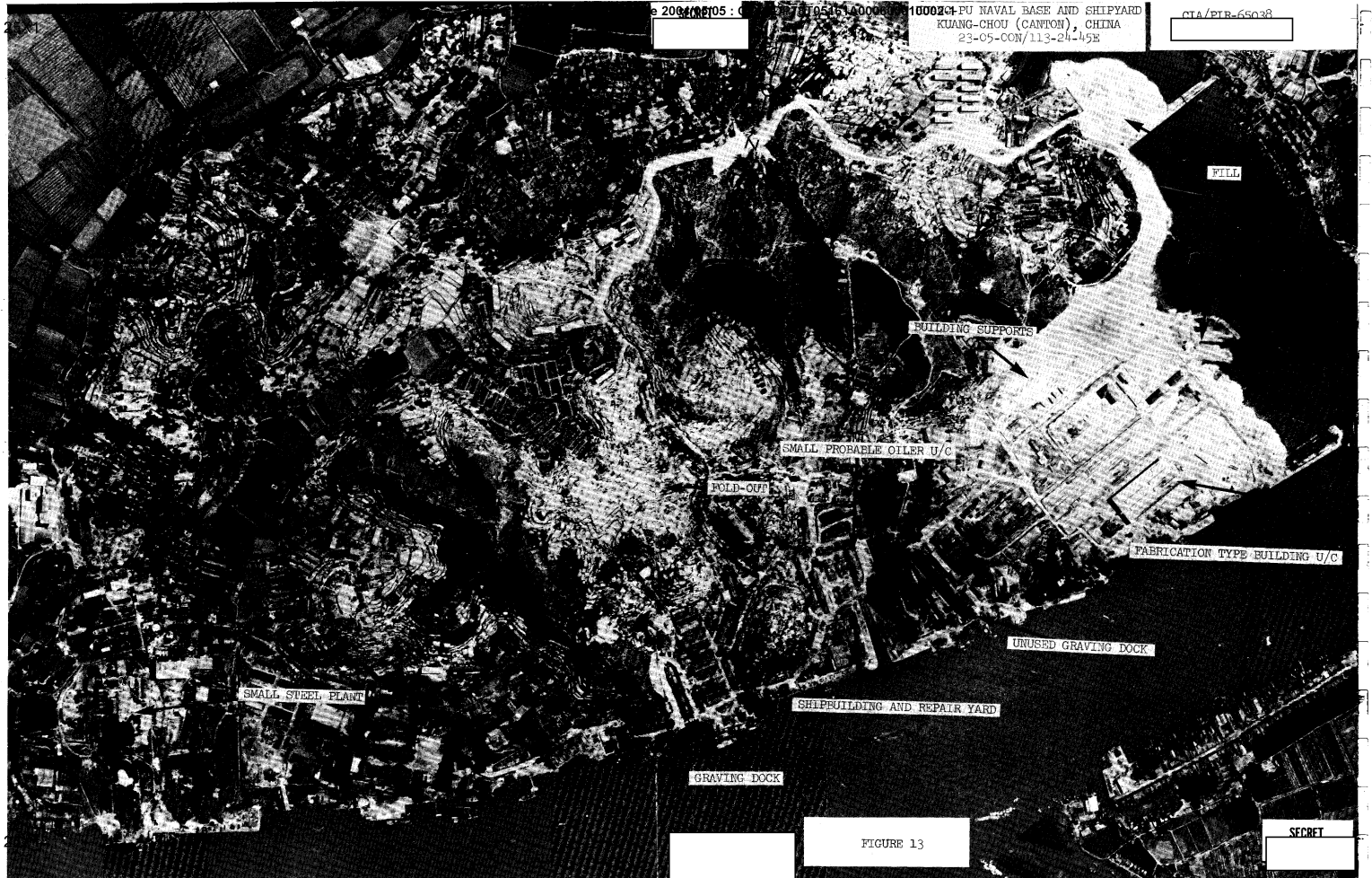
KUANG-CHOU
(CANTON)

25X1

2004/05/05 : CIA-RDP8105161A00060010002-1

1000201 PU NAVAL BASE AND SHIPYARD
KUANG-CHOU (CANTON), CHINA
23-05-CON/113-24-45E

CIA/PTB-65038



25X1

FIGURE 13

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HUANG-PU NAVAL BASE AND SHIPYARD
23-05-00N/113-24-45E

CIA/DIR-65038

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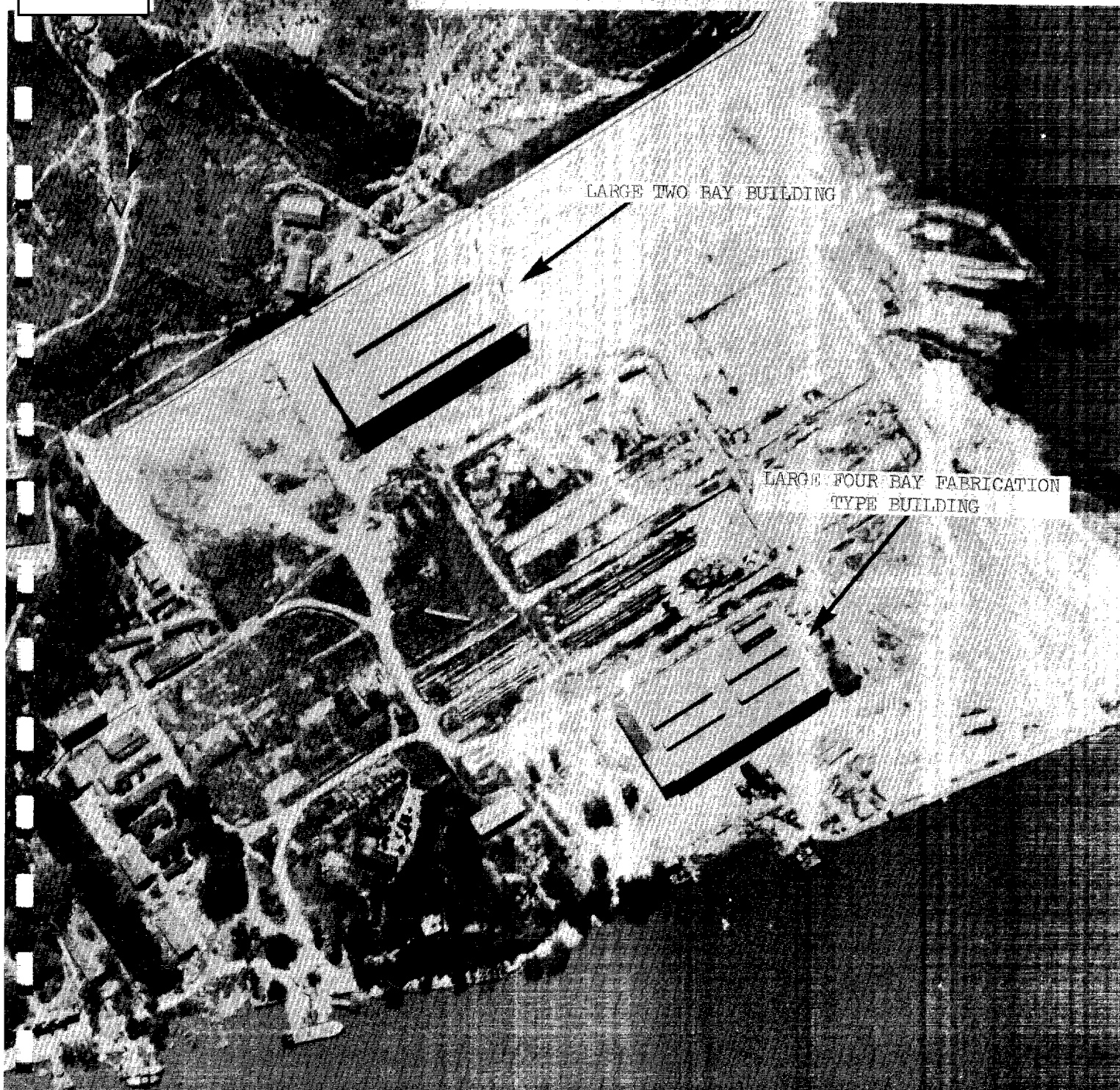


FIGURE 14

25X1

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25X1

25X1

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CIA/PIR-65038

KUANG-CHOU (CANTON), CHINA
23-05-00N/113-24-45E

25X1

SMALL STEEL PLANT

"SWATOW" CLASS PGM
ON NEW RAMP

2 POSSIBLE "WHAMPOA"
CLASS YP

POSSIBLE SMALL BOAT
REPAIR YARD U/C

"SWATOW" CLASS PGM

PROBABLE "KRONSTADT"
CLASS PC

FIGURE 15

25X

25X1

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25X1

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KUANG-CHOU (CANTON), CHINA

23-05-00N/113-24-45E

CIA/PIR-65038

25X1



FIGURE 16

Approved For Release 2004/05/05 : CIA-RDP78T05161A000600010002-1

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X1

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KUANG-CHOU (CANTON), CHINA

23-06-10N/113-18-45E

PROBABLE AGRICULTURAL
STORAGE BUILDINGS

MERCHANT SHIP

SMALL WHARF

FIGURE 17

Approved For Release 2004/05/05 : CIA-RDP78T05161A000600010002-1

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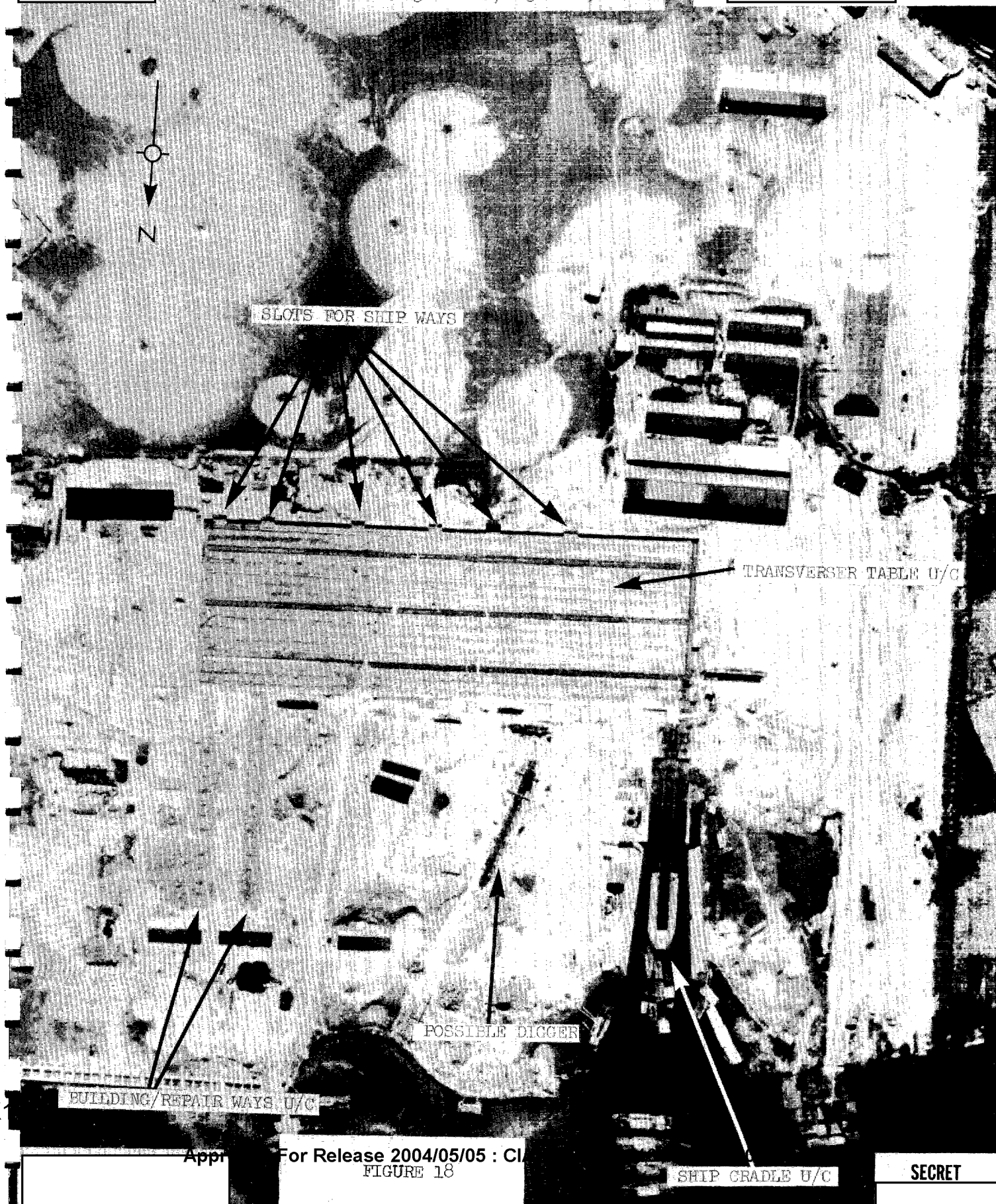
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KUANG-CHOU (CANTON), CHINA
23-06-10N/113-18-45E

CIA/PIR-65038

25X1



25X1

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For Release 2004/05/05 : CIA-RDP78T05161A000600010002-1
FIGURE 18

SHIP CRADLE U/C

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X1

25X1

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Release 2004/05/05 : CIA-RDP78T05 A000600010002-1

UNNAMED SHIPYARD
KUANG-CHOU (CANTON), CHINA
23-05-20N/113-27-45E

017/PER 03038

25X1



25X1

FIGURE 19

App

0010002-1

SECRET

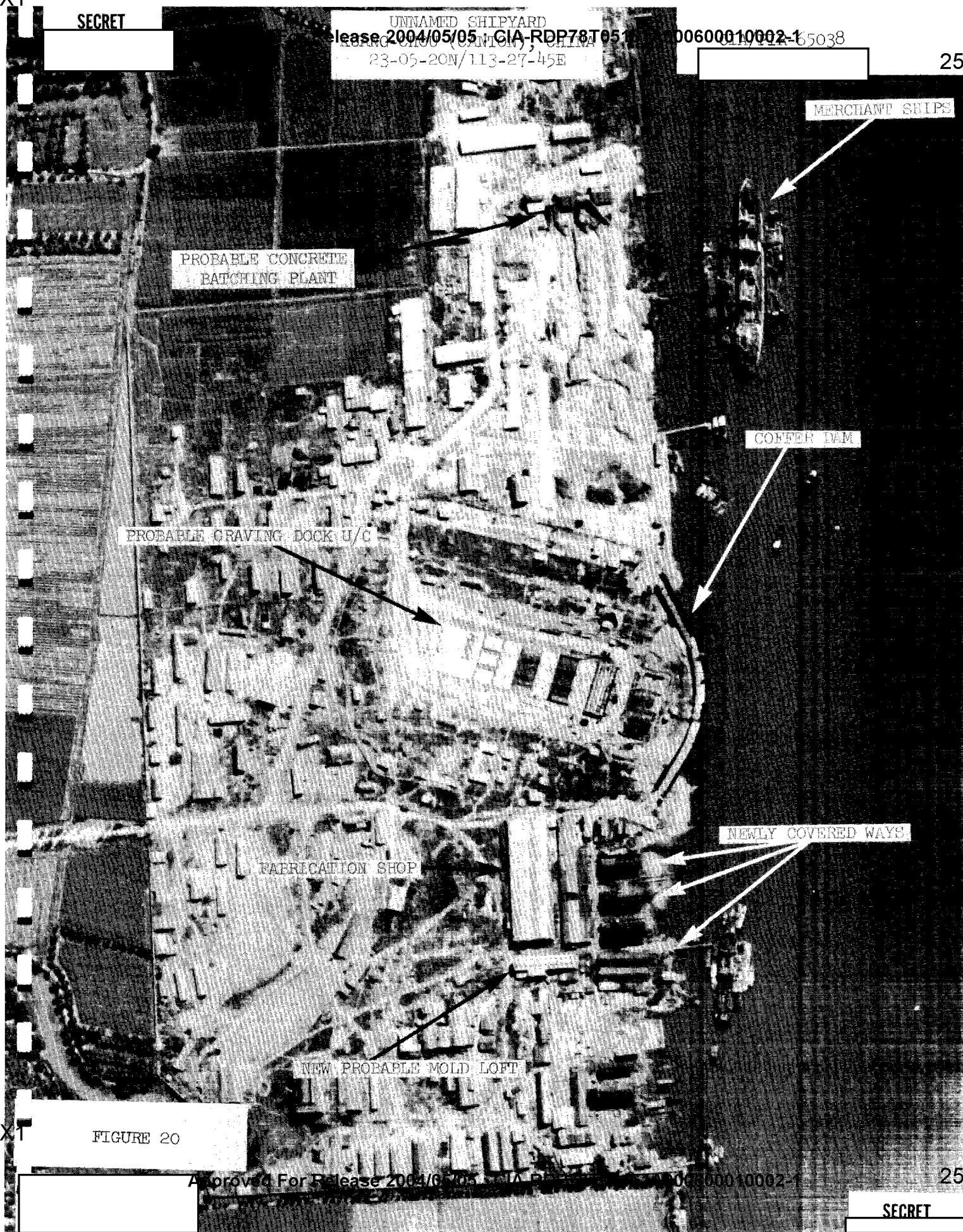
25X1

25X1

SECRET

UNNAMED SHIPYARD
Release 2004/05/05 CIA-RDP78T051000600010002-1
KANG CHOU (CANTON), CHINA
23-05-20N/113-27-45E
00600010002-1 65038

25X1



25X1

FIGURE 20

Approved For Release 2004/05/05 : CIA-RDP78T051000600010002-1

25X1

SECRET

25X1

SECRET

Approved For Release

HO NAM BAO SHEP REPAIR YARD
KUANG-CHOU (CANTON), CHINA
23-06-14N/113-17-58E

CIA/PTB-65038
A000600010002-1

25X1

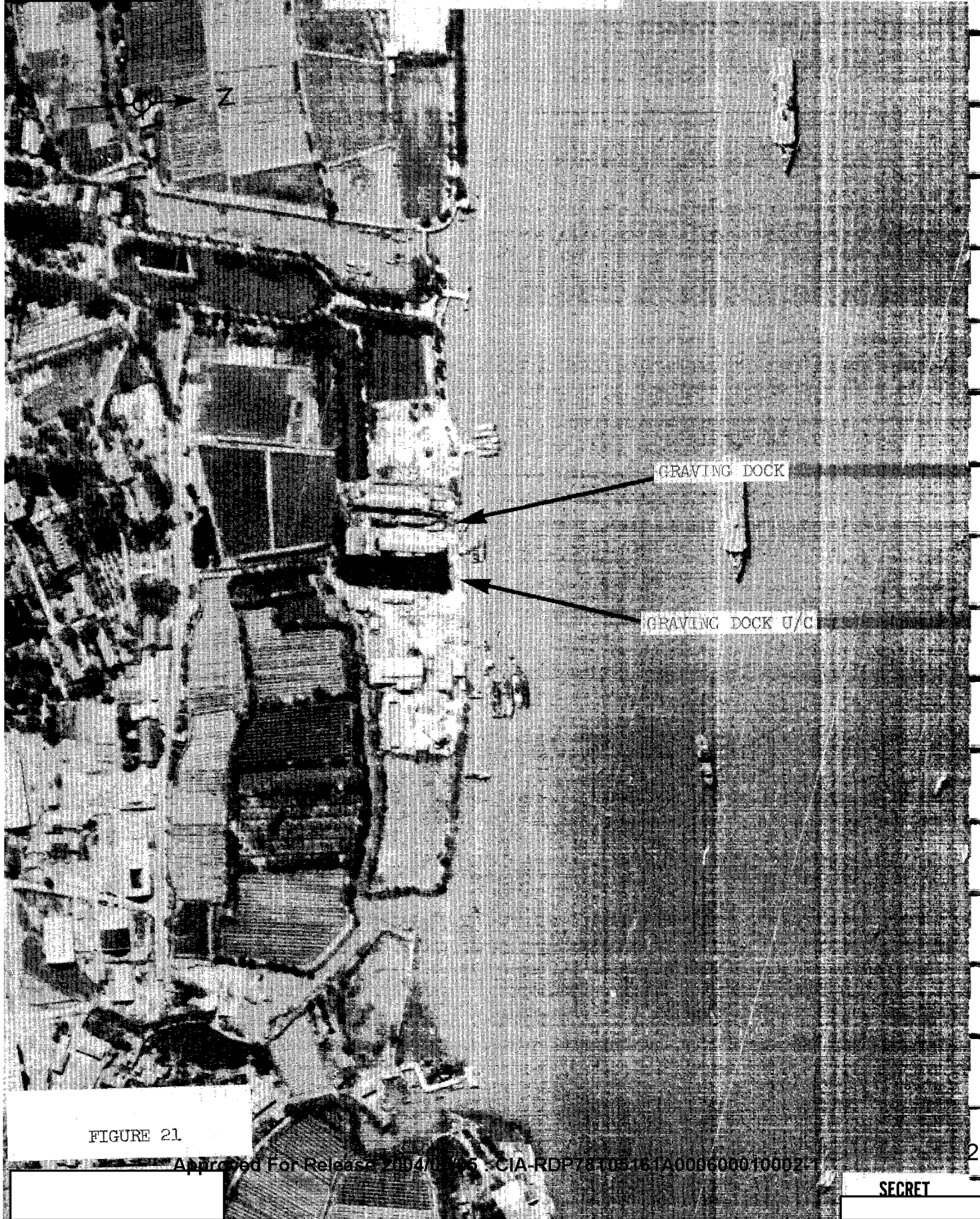


FIGURE 21

Approved For Release

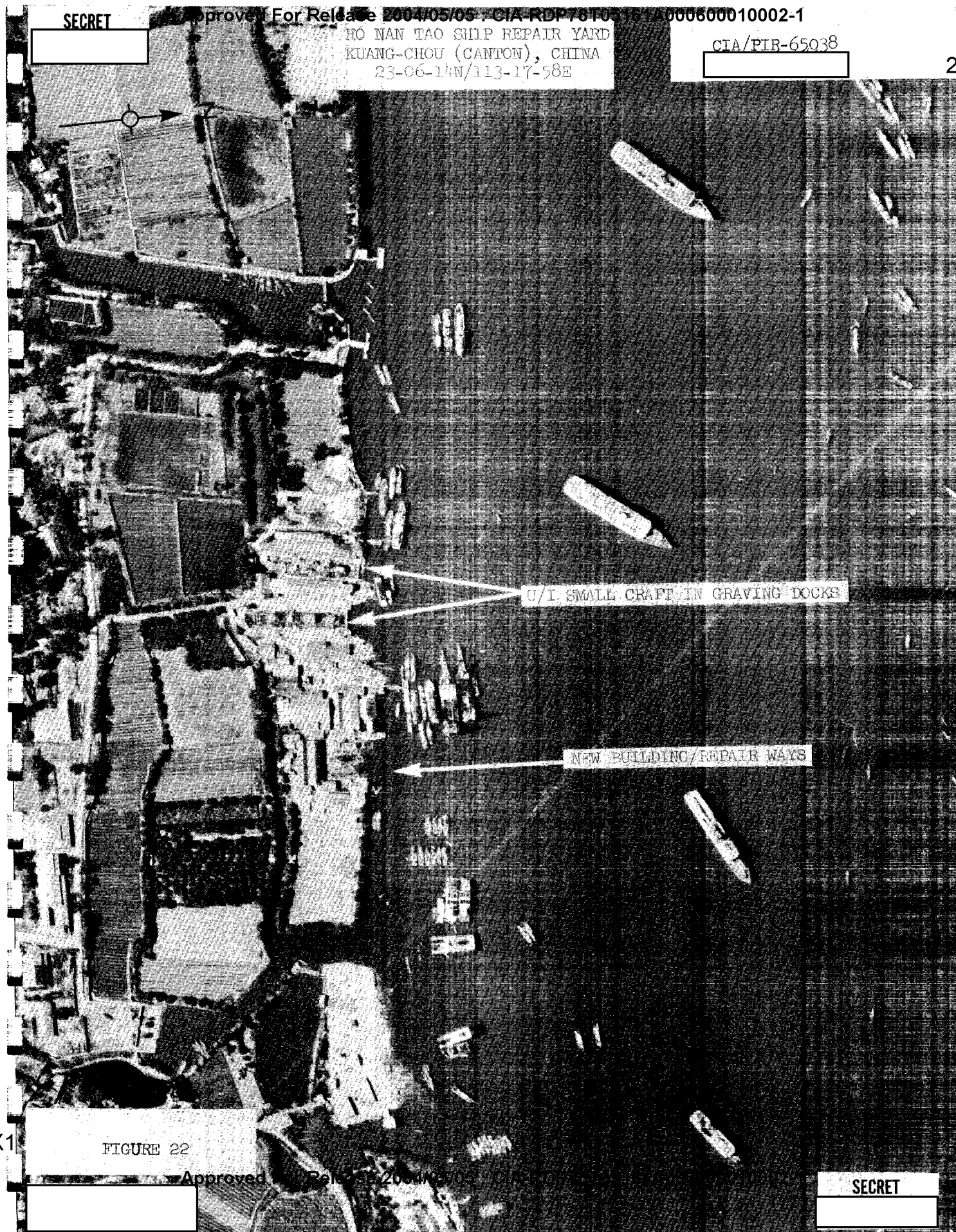
HO NAM BAO SHEP REPAIR YARD
KUANG-CHOU (CANTON), CHINA
23-06-14N/113-17-58E

CIA/PTB-65038
A000600010002-1

SECRET

25X1

25X1



SECRET

Approved For Release 2004/05/05 : CIA-RDP78T05161A000600010002-1

HO NAN TAO SHIP REPAIR YARD
KUANG-CHOU (CANTON), CHINA
23-06-14N/113-17-58E

CIA/PIR-65038

25X1

U/I SMALL CRAFT IN GRAVING DOCKS

NEW BUILDING/REPAIR WAYS

FIGURE 22

Approved For Release 2004/05/05 : CIA-RDP78T05161A000600010002-1

SECRET

25X1

SECRET

Approved For Release 2004/05/05 : CIA-RDP78T05161A000600010002-1

TUNG TANG SHIPYARD
KUANG-CHOU (CANTON), CHINA
23-04-30N/113-14-47E

00600010002-1-65038

25X1

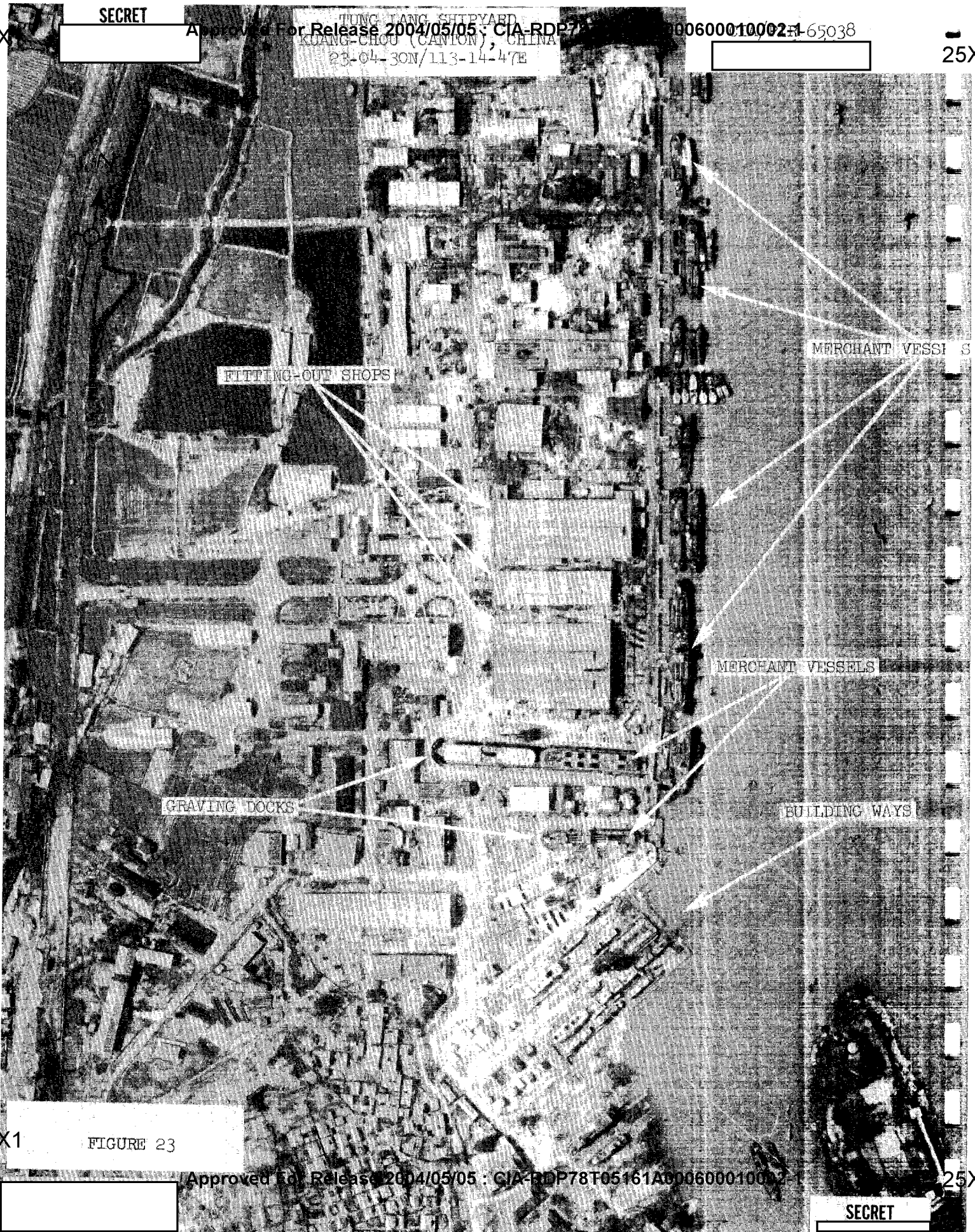


FIGURE 23

Approved For Release 2004/05/05 : CIA-RDP78T05161A000600010002-1

SECRET

25X1

SECRET

Approved For Release 2004/05/05 : CIA-RDP78T0161A000600010002-1

Release 2004/05/05 : CIA-RDP78T0161A000600010002-1
KUANG-CHOU (CANTON), CHINA
23-04-30N/113-14-47E

CTA/CTB-65038

25X1

BUILDING U/C

MERCHANT VESSELS

FIGURE 24

SECRET

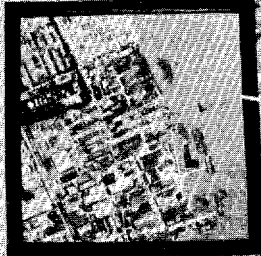
SECRET

Approved For Release 2001/05/05 : CIA-RDP80-0516A000600010002-1

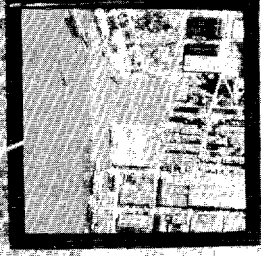
MAJOR SHIPYARDS SHANGHAI, CHINA

CIA/PIR-65038

CHUNG-HUA
SHIPYARD



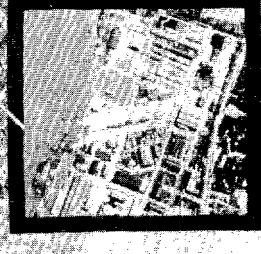
HU-TUNG
SHIPYARD



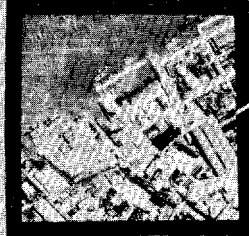
SHANGHAI
DOCKYARD



INTERNATIONAL
DOCKYARD



P'U-TUNG
SHIPYARD



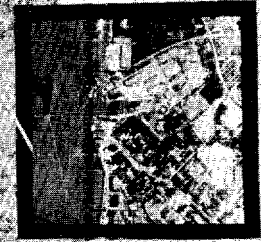
TUNG-CHIA-TU
DOCKYARD



CH'IU-HSIN
SHIPYARD



PING-AN
DOCKYARD



KIANG-NAN NAVAL SHIPYARD

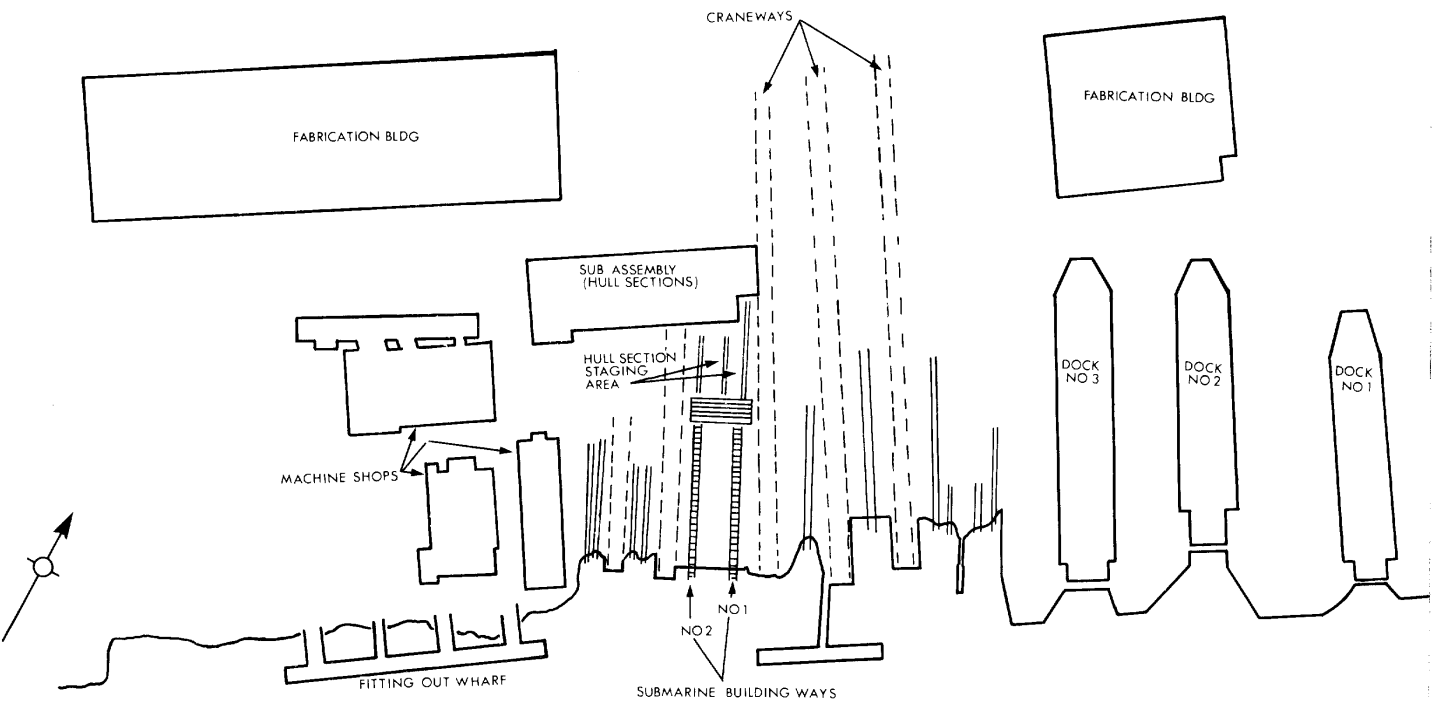
Approved For Release 2001/05/05 : CIA-RDP80-0516A000600010002-1 SECRET

FIGURE 25

SECRET

Approved For Release 2004/05/05 : CIA-RDP78T05161A000600010002-1

KIANG - NAN SHIPYARD
SHANGHAI, CHINA



Approved For Release 2004/05/05 : CIA-RDP78T05161A000600010002-1

SECRET

FIGURE 26

25X1

25X1

KIANG-NAN NAVAL SHIPYARD
SHANGHAI, CHINA

CIA/PIR-65038

25X1

Approved For Release 2004/05/05 : CIA-RDP78T05161A000600010002-1

FABRICATION BUILDING

SUB-ASSEMBLY BUILDING
(HULL SECTIONS)

SUBMARINE HULL SECTIONS

PROB SUBMARINE HULL SECTION

FITTING-OUT BARGE

SECURITY SCREENS

2 "W" CLASS SS

FITTING-OUT WHARF

25X1

Approved For Release 2004/05/05 : CIA-RDP78T05161A000600010002-1

FIGURE 27

SECRET

25X1

SECRET

KTANG-NAN NAVAL SHIPYARD
SHANGHAI, CHINA
31-11-53N/121-29-05E
CIA/PTR-65038
2004/05/05 : CIA-RDP78T05161A000600010002-1

25X1

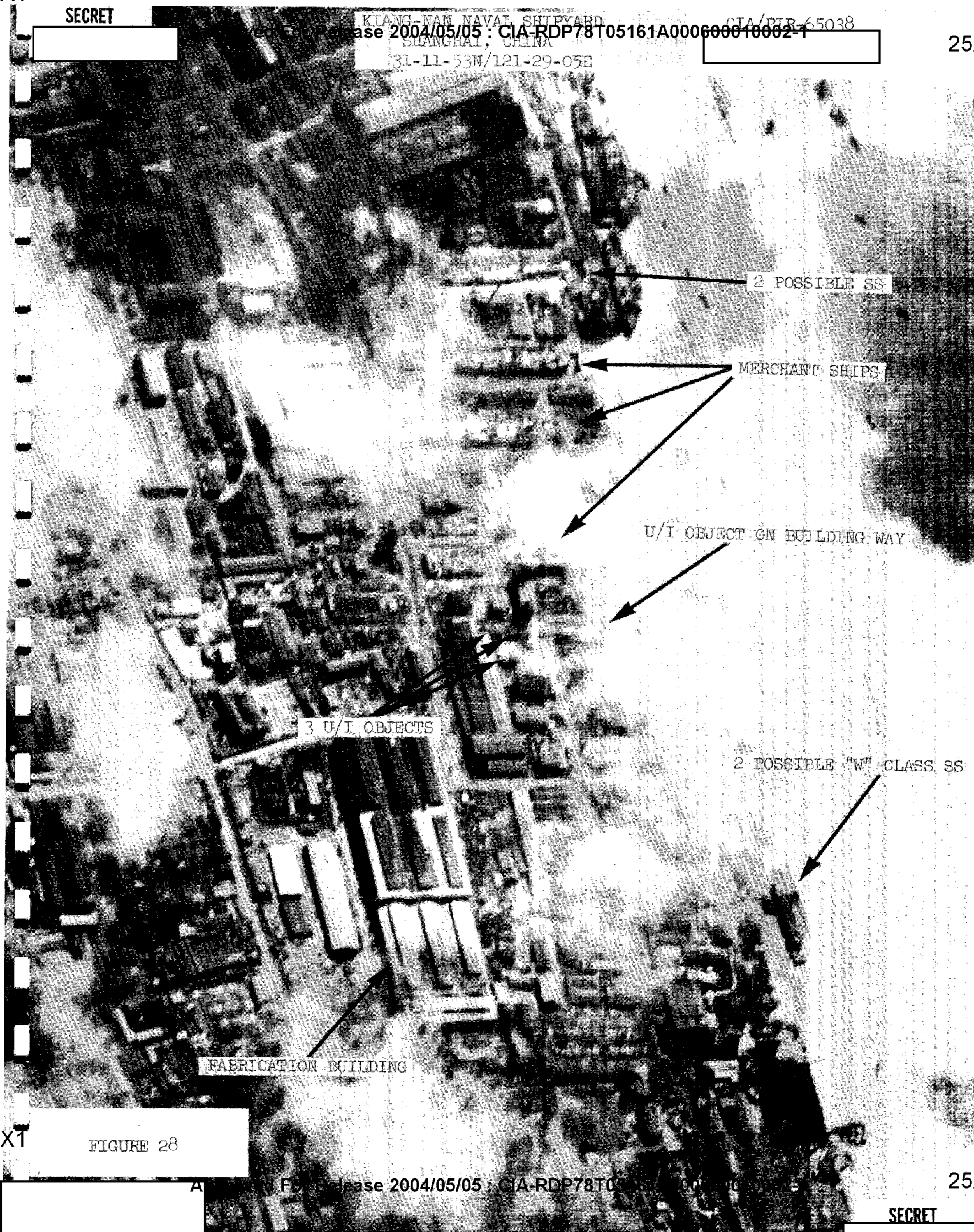


FIGURE 28

A

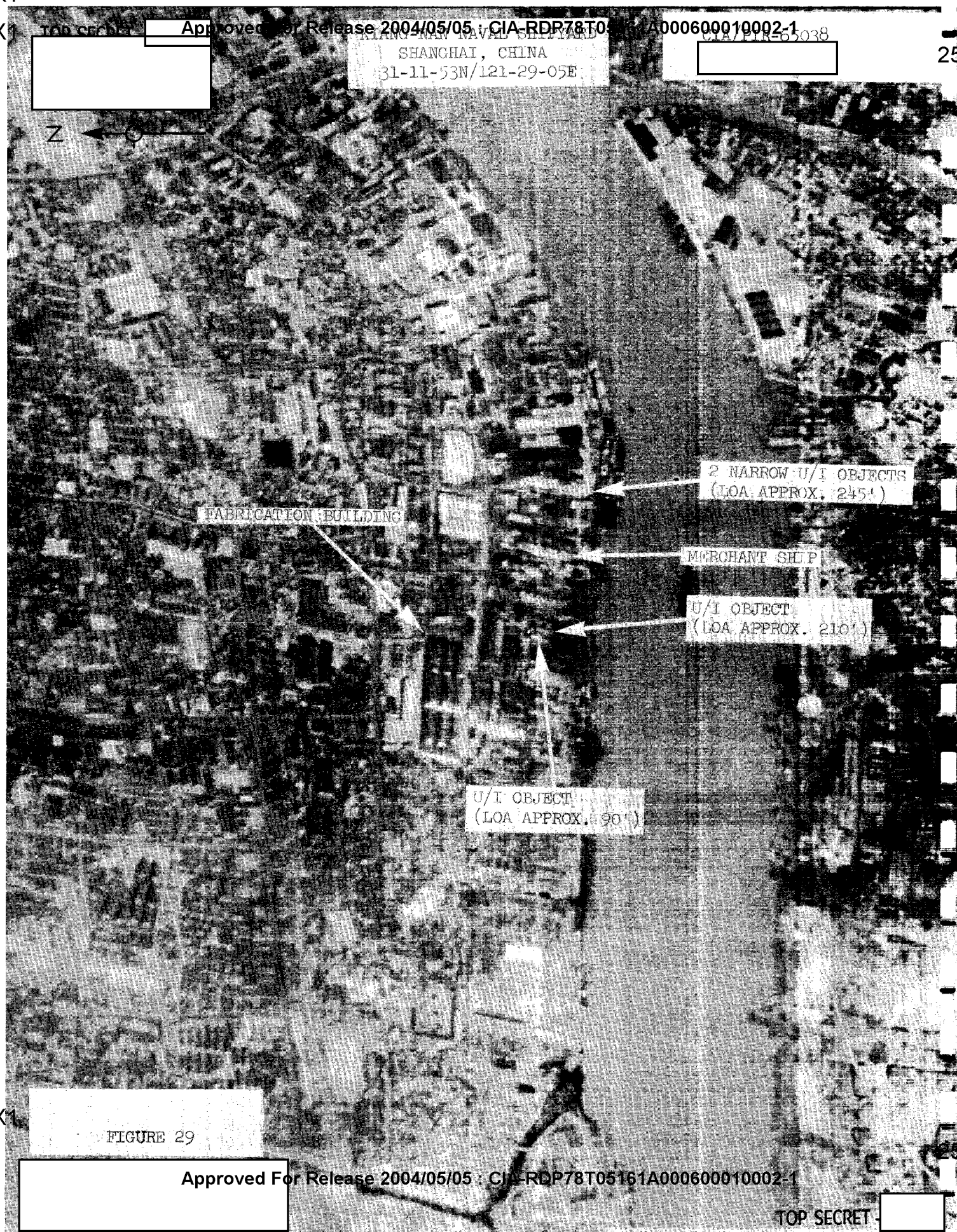
2004/05/05 : CIA-RDP78T05161A000600010002-1

25X1

SECRET

25X1

25X1



25X1

25X1

SECRET

Approved For Release 2004/05/05 : CIA-RDP78

006000100021 65038

SHANGHAI, CHINA
31-11-53N/121-29-05E

25X1



U/I OBJECTS

MERCHANT SHIPS

UNOCCUPIED WAY

UNIDENTIFIABLE CLUTTER

FABRICATION BUILDING

PROBABLE "W" CLASS SS

FLATTING-OUT BARGE

FIGURE 30

Approved For Release 2004/05/05 : CIA-RDP78-006000100021 65038

SECRET

25X1
25X1

TOP SECRET

Approved For Release 2004/05/05 : CIA-RDP78T05161A000600010002-1

KIANG-NAN NAVAL SHIPYARD

CIA/PIR-65038

SHANGHAI, CHINA

31-11-53N/121-29-05E

25X1

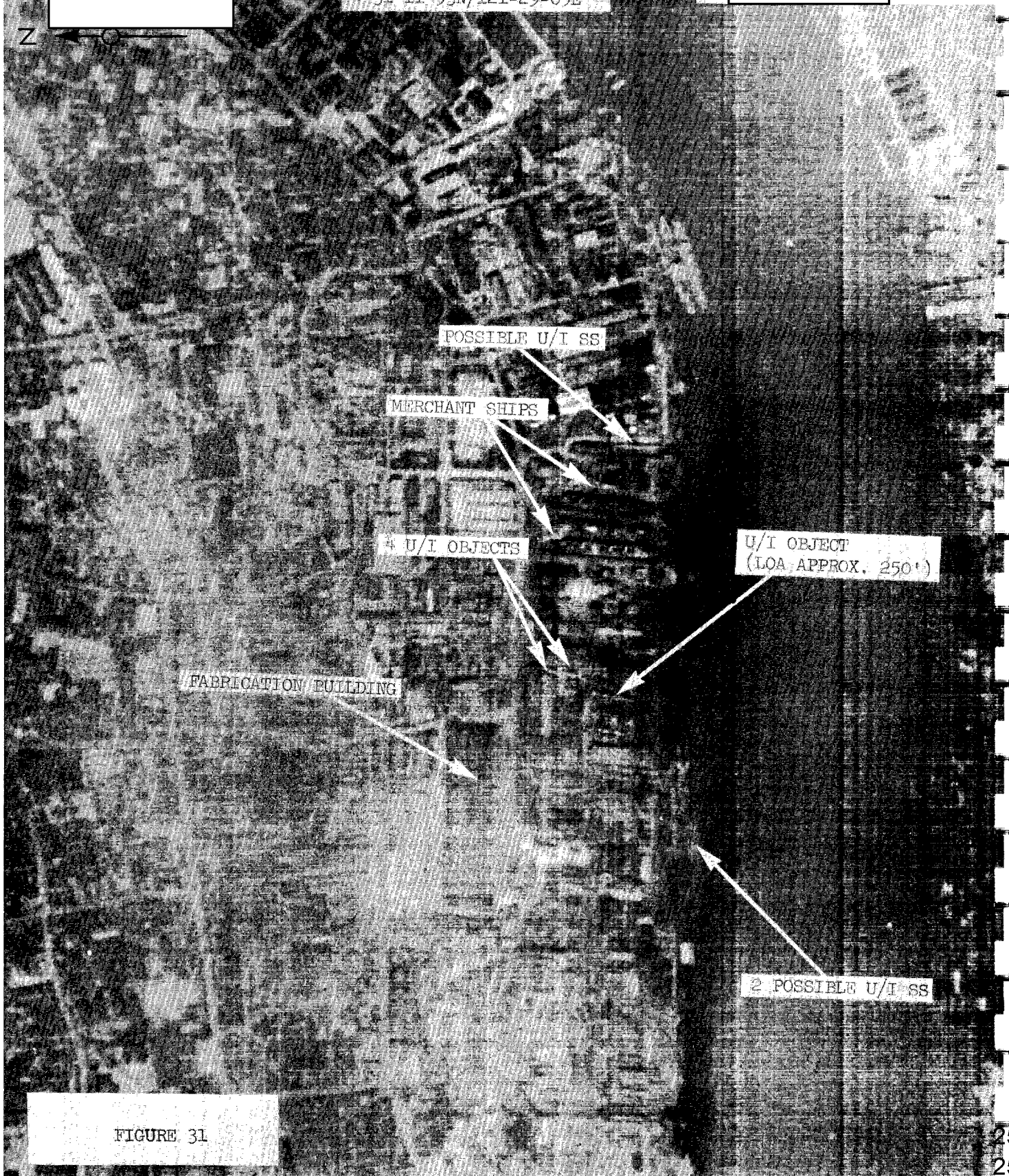


FIGURE 31

25X1

25X1

25X1

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TOP SECRET

SECRET

Approved For Release 2004/05/05 : CIA-RDP78T05161A00060010002-1 CIA/PIR-65038

SHANGHAI, CHINA
31-11-53N/121-29-05E

"W" CLASS SS

MERCHANT SHIPS

PROBABLE "W" CLASS
HULL SECTIONS

"W" CLASS SS U/C

SUB-ASSEMBLY BUILDING
(HULL SECTIONS)

2 POSSIBLE "S-1" CLASS SS

2 POSSIBLE "W" CLASS SS

FIGURE 32

Approved For Release 2004/05/05 : CIA-RDP78T05161A00060010002-1

SECRET

SECRET

KIANG-NAN NAVAL SHIPYARD

STA/PIR-65038

Approved For Release 2004/05/05 : CIA-RDP78T05161A000600010002-1

31-11-53N/121-29-05E

SUB-ASSEMBLY BUILDING
(HULL SECTION)

PROBABLE "W" CLASS SS
HULL SECTIONS

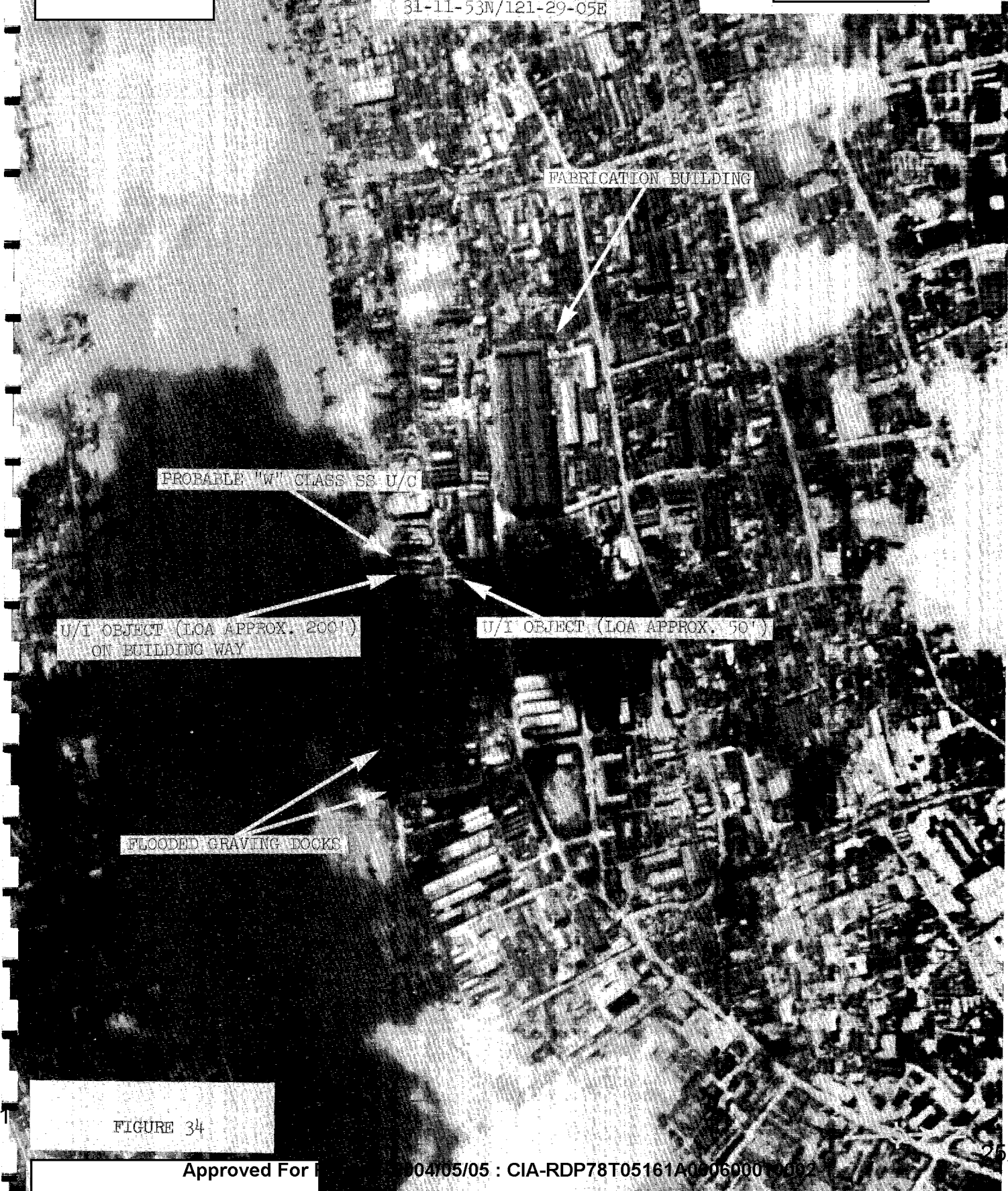
"W" CLASS SS U/C

FOLD OUT

FIGURE 33

Approved For Release 2004/05/05 : CIA-RDP78T05161A000600010002-1

SECRET



SECRET

Approved For Release 2004/05/05 : CIA-RDP78T05161A000600010002-1

HU-LONG PULP YARD
SHANGHAI, CHINA
31-16-05N/121-33-48E

00028

25X1

LAUNCHING WAY

U.S. "LST-1"

MERCHANT SHIP U/C

MERCHANT SHIPS

FIGURE 35

Approved For Release 2004/05/05 : CIA-RDP78T05161A000600010002-1

SECRET

25X1

SECRET

Approved For Release 2004/05/05 : CIA-RDP78T05161A000600010002-1

HU-TUNG SHIPYARD

SHANGHAI, CHINA

31-16-05N/121-33-48E

CIA-PLR-65038

25X1

SECURITY SCREENS

2 PROBABLE "P-4" CLASS PT

PROB AUXILIARY

"RICA" CLASS DE

2 POSSIBLE "P-6" CLASS

PT HULLS

MERCHANT VESSEL U/C

PROBABLE "KATEOKAN II"
CLASS PT

2 RIVER BOATS (PASSENGER)

FIGURE 36

25X1

Approved For Release 2004/05/05 : CIA-RDP78T05161A000600010002-1

SECRET

25X1

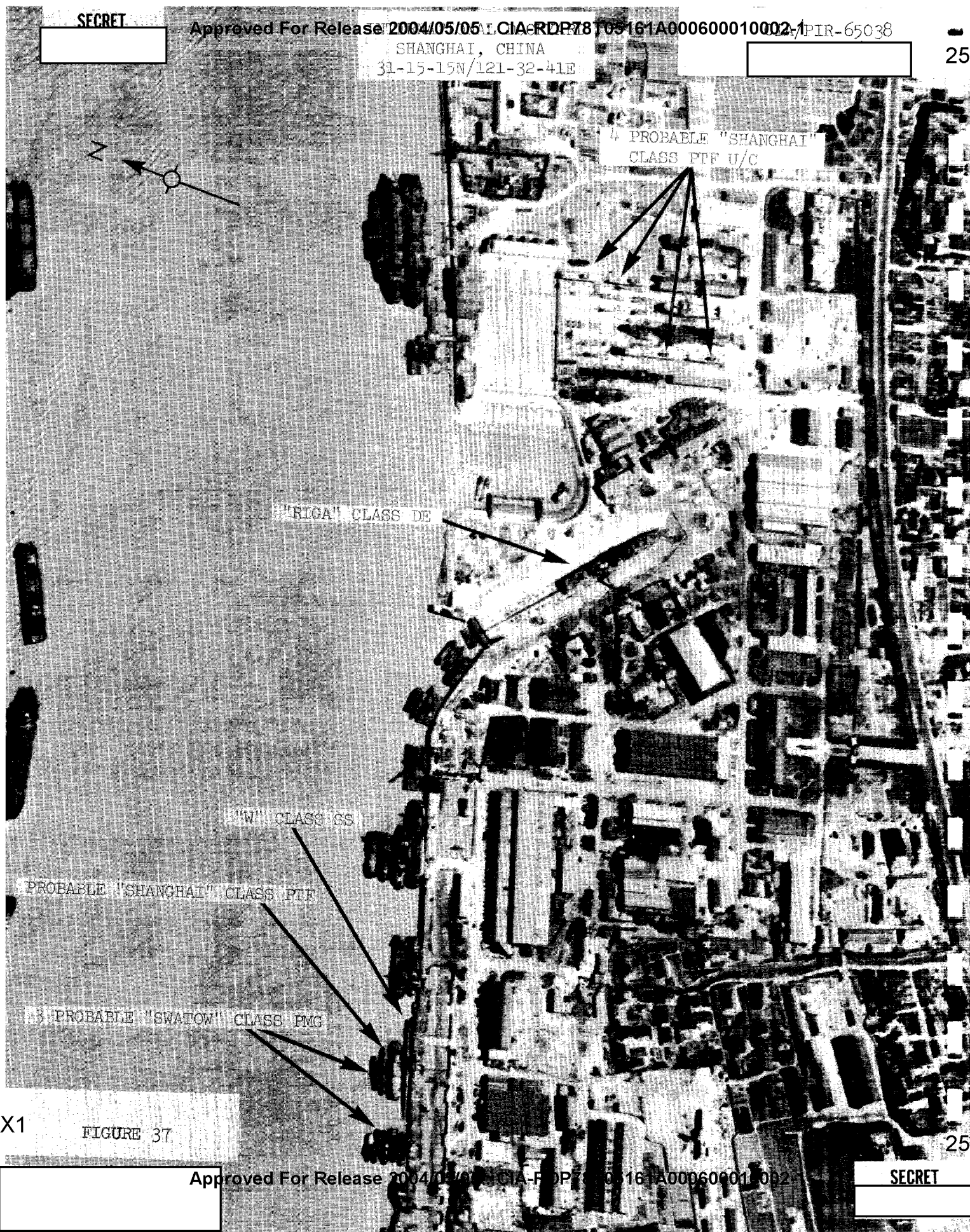
25X1

SECRET

Approved For Release 2004/05/05 : CIA-RDP78-06161A000600010002-1

SHANGHAI, CHINA
31-15-15N/121-32-41E

25X1



25X1

FIGURE 37

25X1

Approved For Release 2004/05/05 : CIA-RDP78-06161A000600010002-1

SECRET

25X1

SECRET

Approved

Case 2004/05/05 : CIA-RDP78-00316A000600010002-1
SHANGHAI, CHINA
31-15-15N/121-32-41E

CIA/PTR-65038

25X1

PROBABLE "P-6" CLASS HULL

U/I OBJECT ON PLATFORM

U/I VESSEL (LOA APPROX. 125')

BARGE

PROBABLE P-6 HULL

25X1

25X1

Approved For Release 2004/05/05 : CIA-RDP78-00316A000600010002-1
FIGURE 38

SECRET

K1

SECRET

Approved For Release 2004/05/05 : CIA-RDP78-000600010002-1

SHANGHAI DOCKYARD
SHANGHAI, CHINA
31-15-05N/121-30-50E

CIA/PIR-65038

25X1

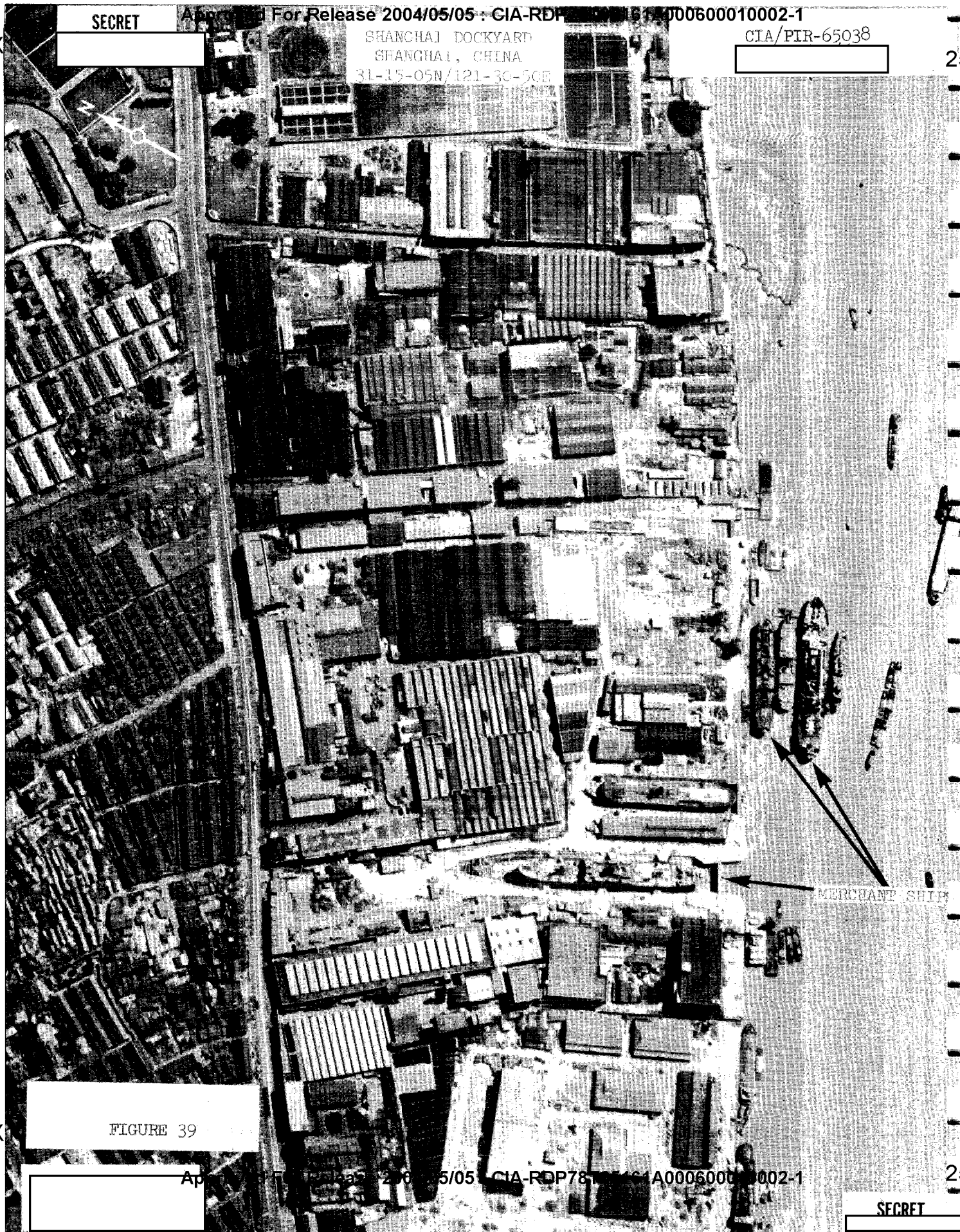


FIGURE 39

Approved For Release 2004/05/05 : CIA-RDP78-000600010002-1

SECRET

25X1

SECRET

Approved For Release 2004/05/05 : CIA-RDP78T05461A000600010002-1

SHANGHAI DOCKYARD
SHANGHAI, CHINA
31-15-05N/121-30-50E

CIA/PIR-65038

25X1

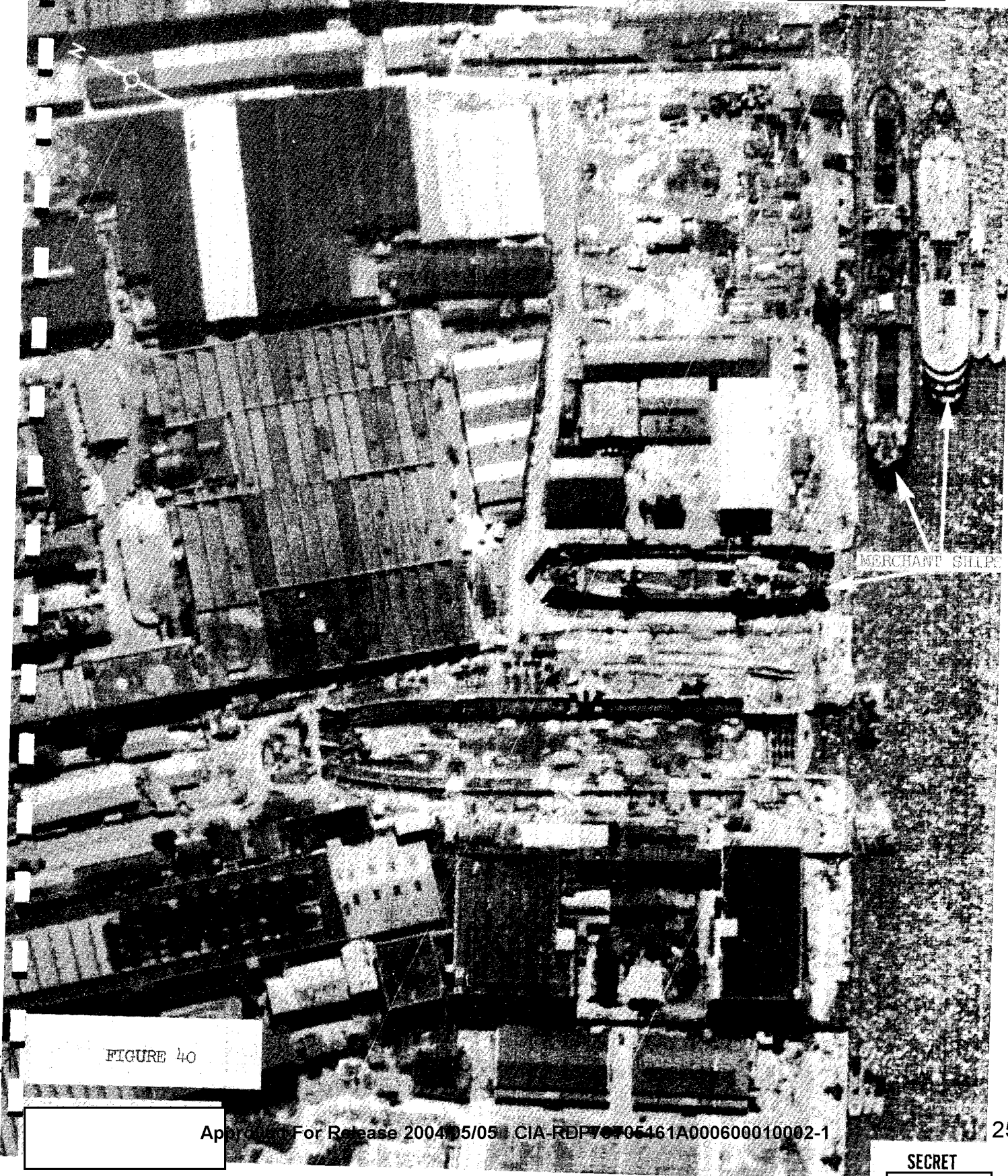


FIGURE 40

Approved For Release 2004/05/05 : CIA-RDP78T05461A000600010002-1

SECRET

25X1

SECRET

Approved For Release 2004/05/05 : CIA-RDP78T05161A000600010002-1

SHANGHAI, CHINA
31-16-55N/121-33-28E

ILR-65038

SMALL RIVER CRAFT U/C

2 BARGES

FIGURE 41

Approved For Release 2004/05/05 : CIA-RDP78T05161A000600010002-1

SECRET

25X1

SECRET

Approved For Release 2004/05/05 : CIA-RDP78-00517A000600010002-1

SHANGHAI, CHINA
31-16-55N/121-33-28E

25X1

3 PROBABLE BARGES U/C

25X1

FIGURE 42

Approved For Release 2004/05/05 : CIA-RDP78-005161A000600010002-1

SECRET

25X1

P U TUNG SHIPYARD
SHANGHAI, CHINA
31-14-47N/121-30-OCE

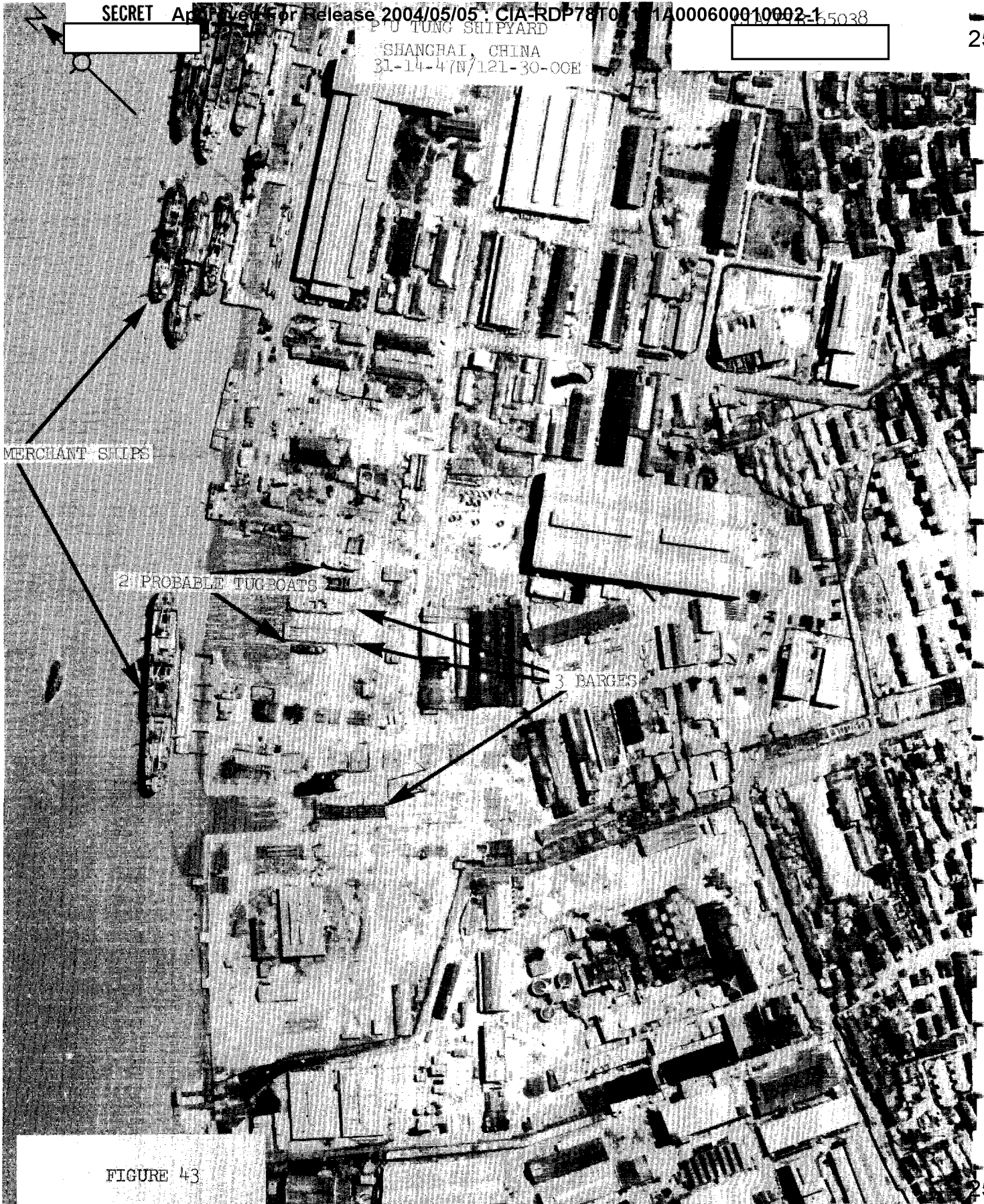


FIGURE 43

SECRET

Approved For Release 2004/05/05 : CIA-RDP78T05161A000600010002-1

SHANGHAI, CHINA
31-14-47N/121-30-00E

PROBABLE TUGBOATS

MERCHANT SHIPS

LARGE U/I HULL U/C

FIGURE 44

Approved For Release 2004/05/05 : CIA-RDP78T05161A000600010002-1

SECRET

25X1

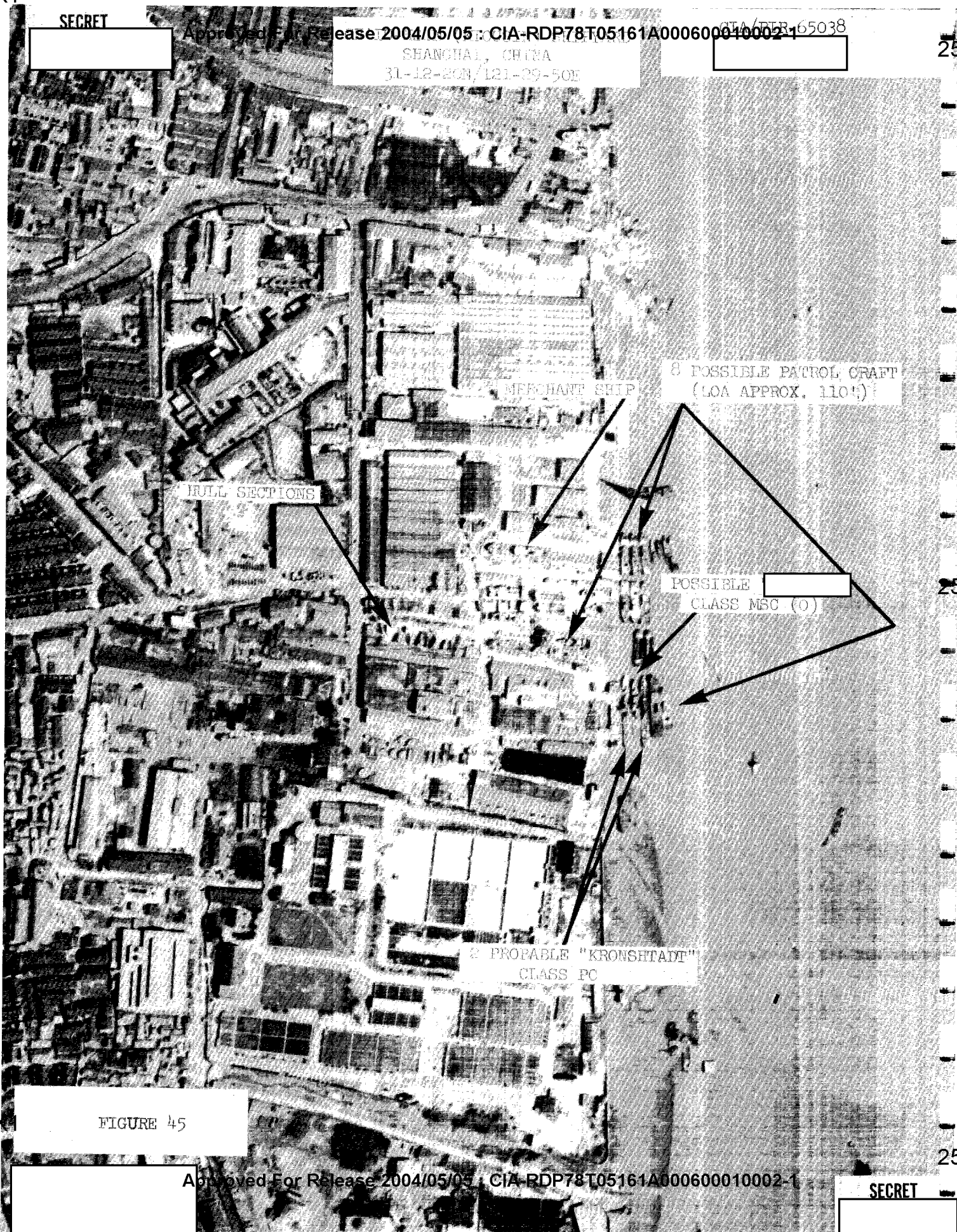
SECRET

Approved For Release 2004/05/05 : CIA-RDP78T05161A000600010002-1

SHANGHAI, CHINA
31-12-20N/121-29-50E

CTA/DTB 65038

25X1



25X1

25X1

FIGURE 45

Approved For Release 2004/05/05 : CIA-RDP78T05161A000600010002-1

SECRET

25X1

25X1

SECRET

Approved For Release 2004/05/05 : CIA-RDP78T05161A000600010002-1

CIA/PTR-65038

25X1

SHANGHAI, CHINA

31-12-20N/121-29-50E

8 POSSIBLE PATROL CRAFT
(LOA APPROX. 110')

2 POSSIBLE PATROL CRAFT
(LOA APPROX. 135')

POSSIBLE "KRONSTADT" CLASS PC

2 POSSIBLE PATROL CRAFT
(LOA APPROX. 110')

FIGURE 46

Approved For Release 2004/05/05 : CIA-RDP78T05161A000600010002-1

SECRET

25X1

SECRET

Approved For Release 2004/05/05 : CIA-RDP78T000600010002-1
SHANGHAI, CHINA
31-12-28N/121-30-12E

00600010002-1
CIA/BTR-65038

25X1

MERCHANT SHIPS

FIGURE 47

Approved For Release 2004/05/05 : CIA-RDP78T000600010002-1

SECRET

25X1

25X1

SECRET

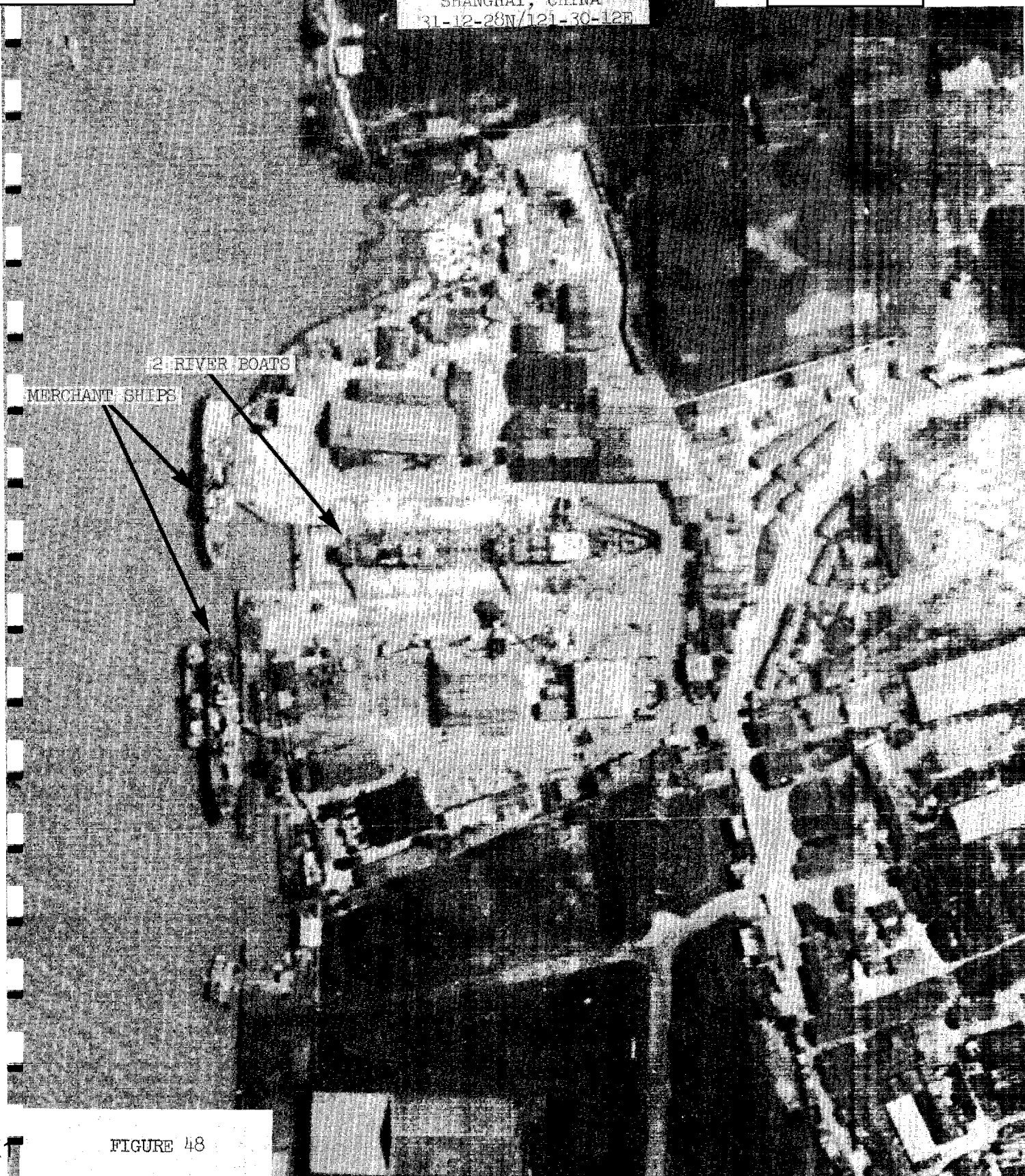
Approved For Release

2004/05/05 : CIA-RDP78T0

61A000600040002-1-65038

25X1

TUNG-CHIA-TO DOCKYARD
SHANGHAI, CHINA
31-12-28N/121-30-12E



25X1

FIGURE 48

Approved For Release

2004/05/05 : CIA-RDP78T05

61A000600040002-1-65038

SECRET

25X1

25X1

SECRET

4/05/05 : CIA-RDP78T0516

00600010002-1-65038

PLING-AN DOCKYARD

SHANGHAI, CHINA

31-11-59N/121-29-58E

25X1

2 POSSIBLE PATROL CRAFT
(LOA APPROX. 110')

BARGES

SMALL MERCHANT VESSELS

FIGURE 49

Approved For Release 2004/05/05 : CIA-RDP78T0516-000600010002-1

SECRET

25X1

SECRET

Approved For Release 2004/05/05 : CIA-RDP7

00600910002-1 CTA/PTB-65038

PING-AN DOCKYARD

SHANGHAI, CHINA

31-11-59N/121-29-58E

25X1

5 BARGES

SMALL MERCHANT VESSELS

3 RIVER BOATS

FIGURE 50

Approved For Release 2004/05/05 : CIA-RDP7

00600910002-1

SECRET

X1

SECRET

Approved For Release 2004/05/05 : CIA-RDP78T05161A000600010002-1 PIR-65038

WU-CHANG SHIPYARD

WU-CHANG, CHINA

30-31-55N/114-17-00E

25X

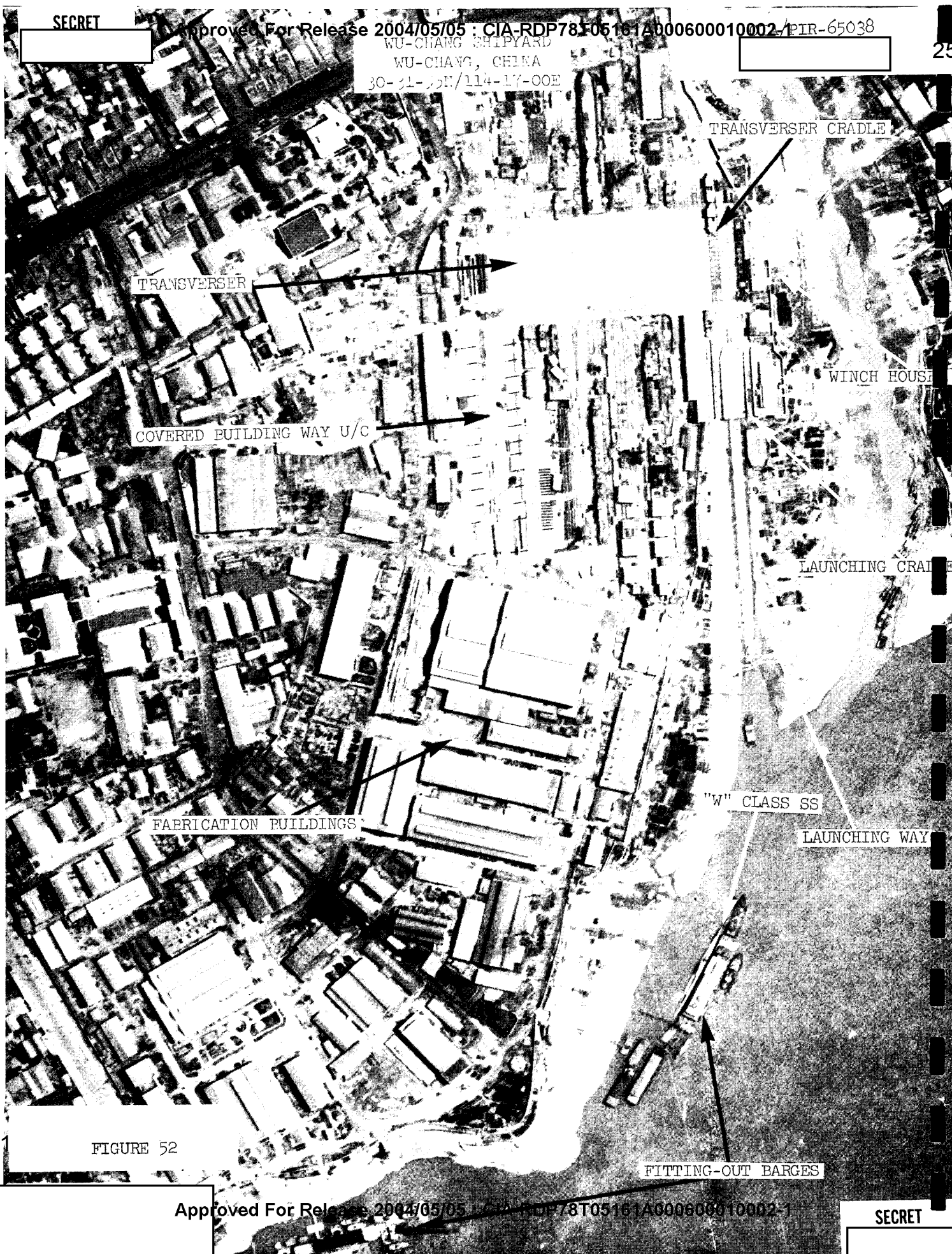


FIGURE 52

Approved For Release 2004/05/05 : CIA-RDP78T05161A000600010002-1

SECRET

SECRET

Approved For Release 2004/05/05 : CIA-RDP78T05161A000600010002-1
WU-CHANG SHIPYARD
WU-CHANG, CHINA

CIA/PIR-65038

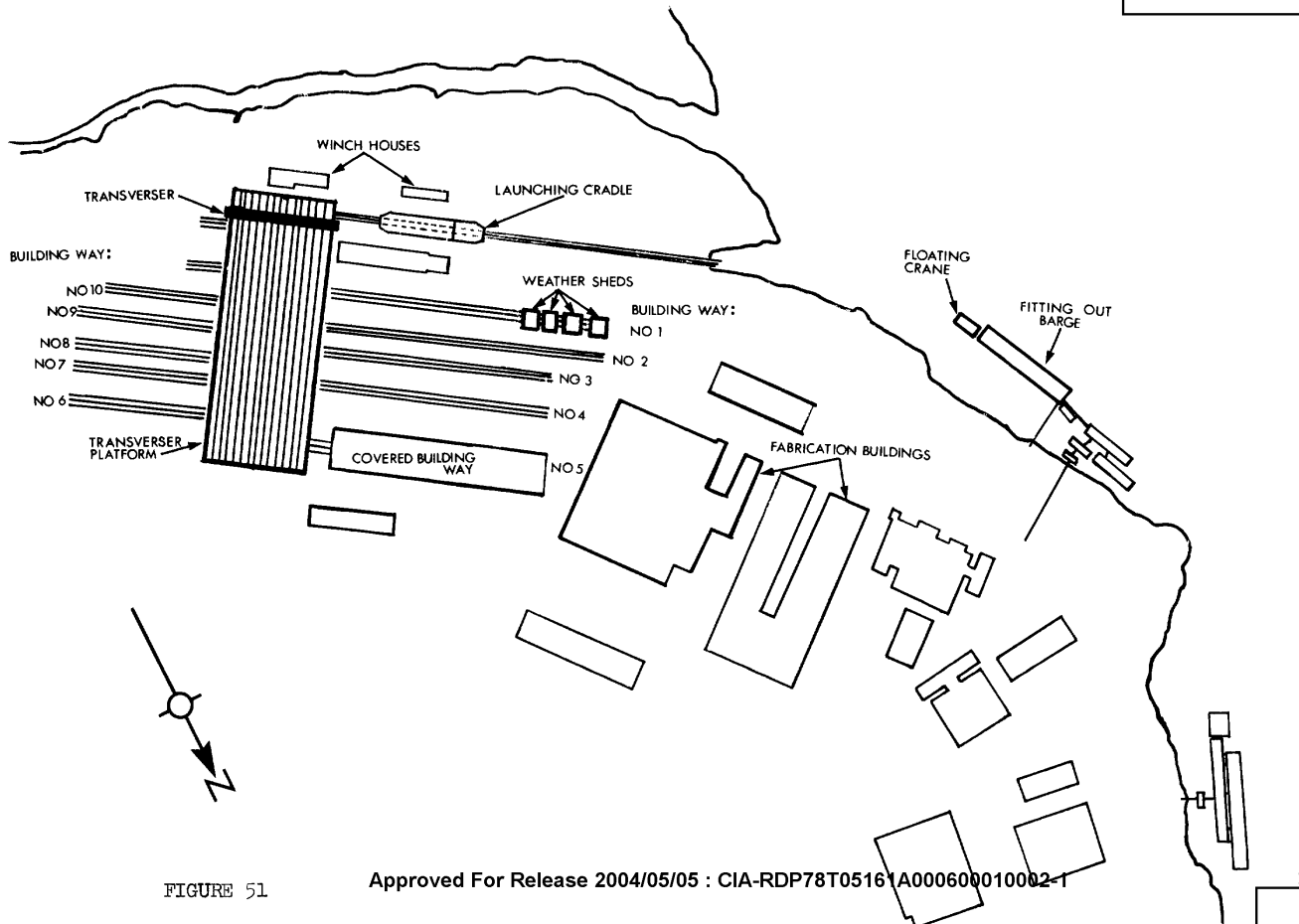


FIGURE 51

Approved For Release 2004/05/05 : CIA-RDP78T05161A000600010002-1

SECRET

SECRET

2004/05/05 : CIA-RDP78T05161A000600010002-1
WU-CHANG, CHINA
30-31-55N/114-17-00E

CIA/RIR-65038
600010002-1

U/I SHIPS U/C
(LOA APPROX. 210')

POSSIBLE SUBMARINE HULL SECTIONS

PROBABLE U.S. "LSM-1" CLASS

2 POSSIBLE "KRONSTADT"
CLASS PC

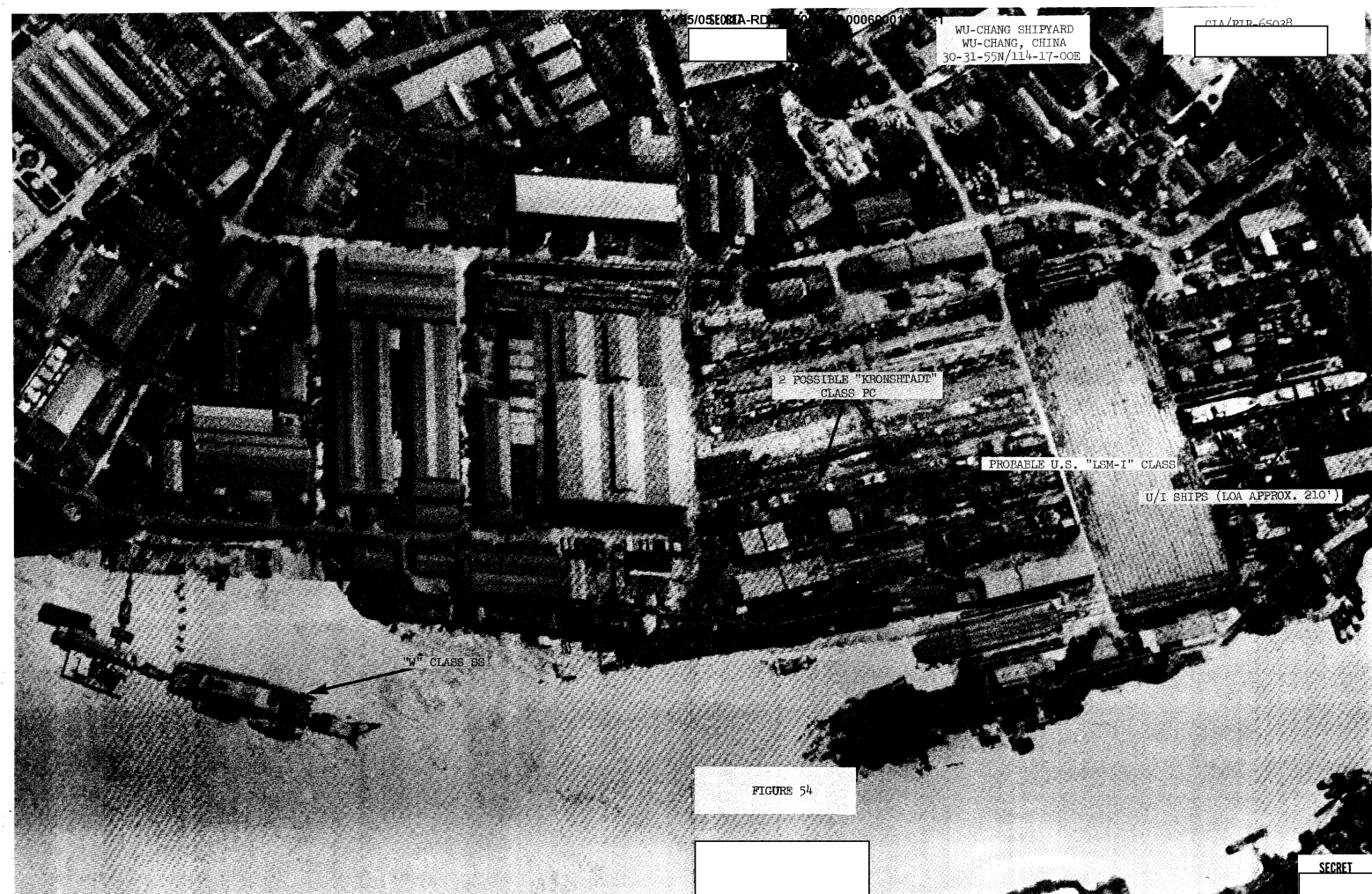
POSSIBLE SUBMARINE HULL
SECTIONS

FIGURE 53

WEATHER SHEDS

U/I CYLINDRICAL OBJECTS

SECRET



5/05E001A-RD

00060001

WU-CHANG SHIPYARD
WU-CHANG, CHINA
30-31-55N/114-17-00E

CIA/PLR 68028

2 POSSIBLE "KRONSTADT"
CLASS PC

PROBABLE U.S. "LSM-1" CLASS

U/I SHIPS (LOA APPROX. 210')

CLASS SS

FIGURE 54

25X1

25X1

SECRET

25X1

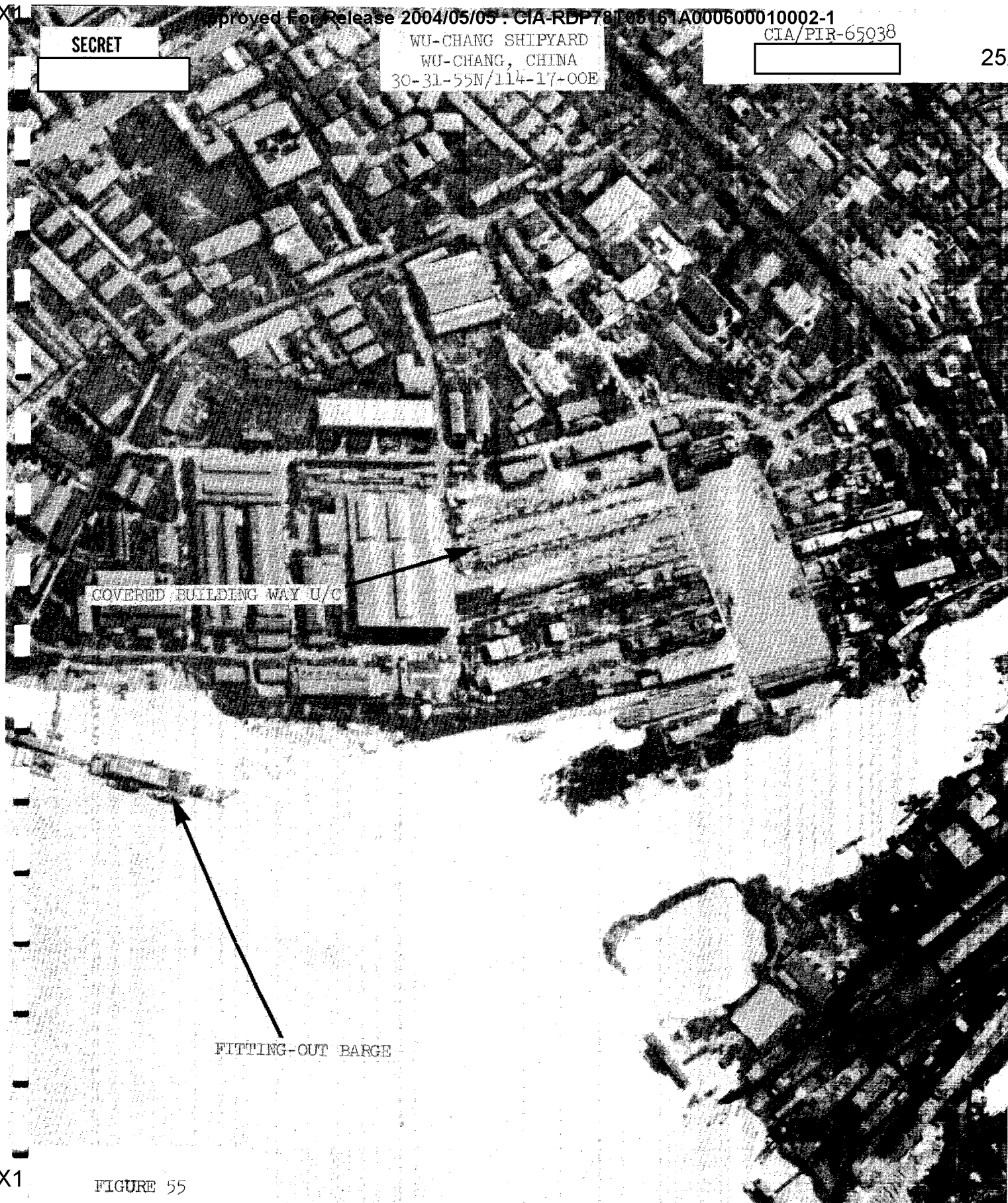
Approved For Release 2004/05/05 : CIA-RDP78T05161A000600010002-1

SECRET

WU-CHANG SHIPYARD
WU-CHANG, CHINA
30-31-55N/114-17-00E

CIA/PIR-65038

25X1



COVERED BUILDING WAY U/C

FITTING-OUT BARGE

25X1

FIGURE 55

Approved For Release 2004/05/05 : CIA-RDP78T05161A000600010002-1

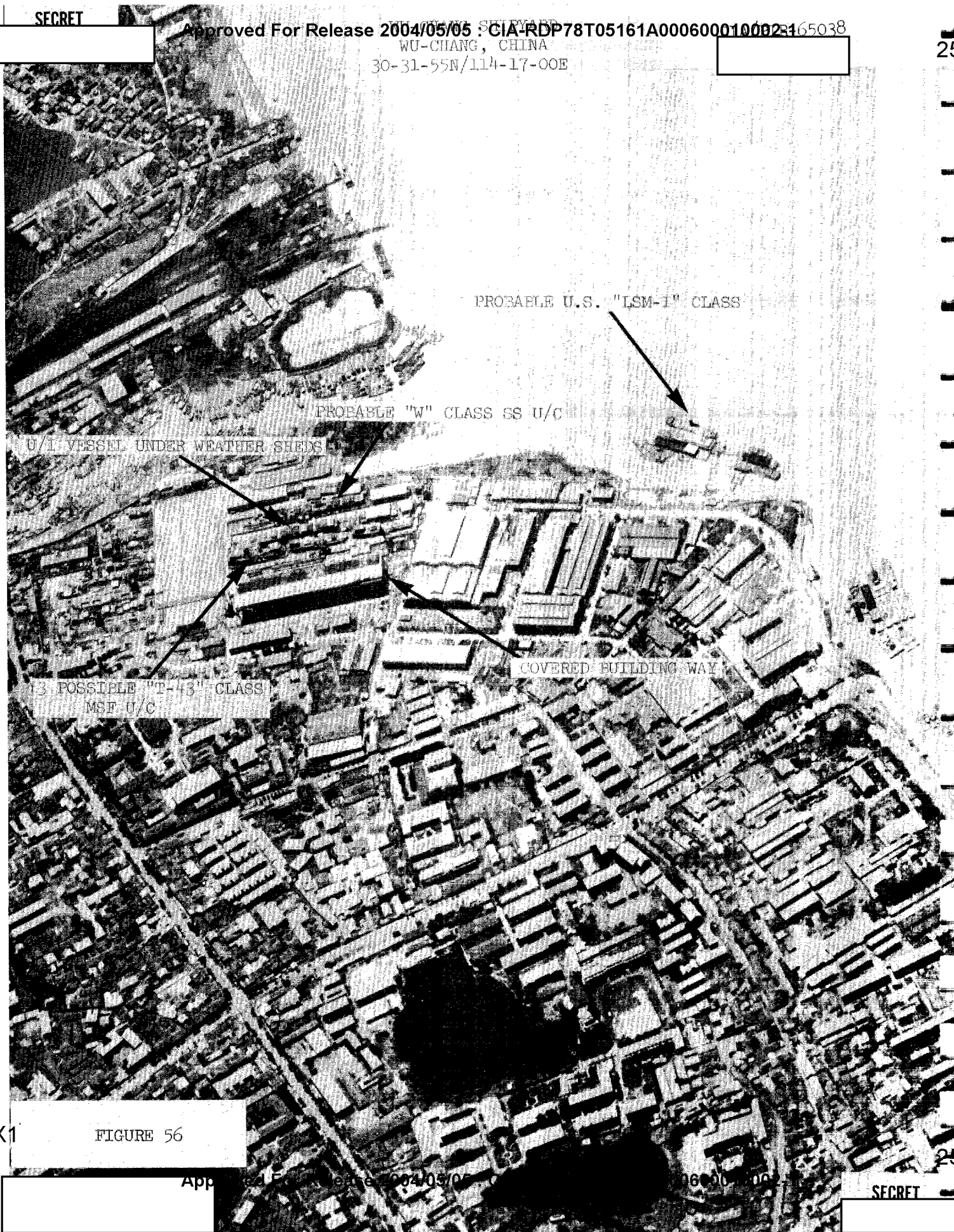
SECRET

25X1

SECRET

Approved For Release 2004/05/05 : CIA-RDP78T05161A000600010002-165038
WU-CHANG, CHINA
30-31-55N/114-17-00E

25X1



25X1

FIGURE 56

App

215

Approved For Release 2004/05/05

06000000

SECRET

25X1

25X1

SECRET

Approved For Release 2004/05/05 : CIA-RDP78T05161A000600010002-1

WU-CHANG, CHINA

30-31-55N/114-17-00E

25X1

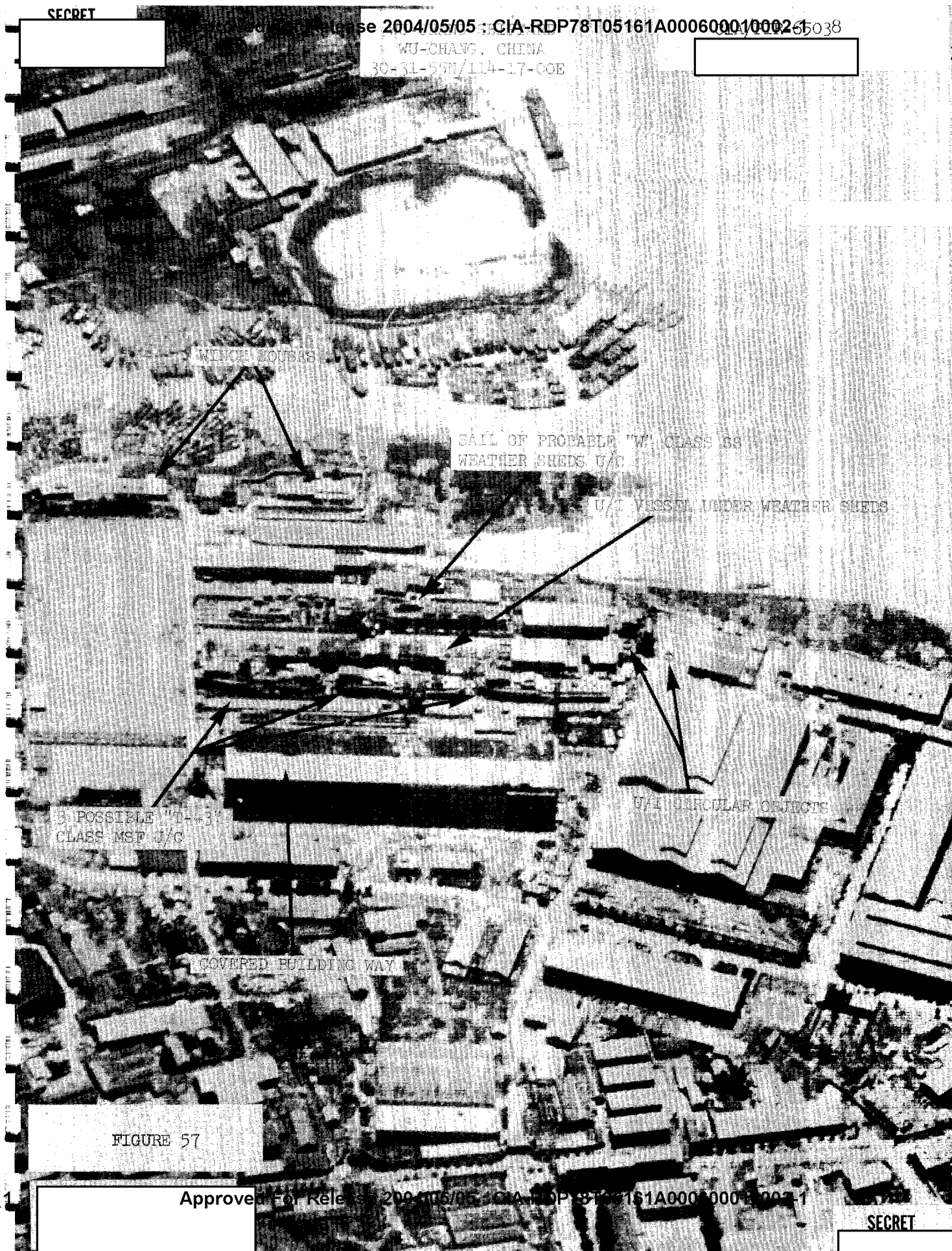


FIGURE 57

25X1

Approved For Release 2004/05/05 : CIA-RDP78T05161A000600010002-1

25X1

SECRET

25X1
25X1

TOP SECRET

Approved For Release 2004/05/05 : CIA-RDP78T05161A000600010002-1

WU-CHANG, CHINA

30-31-55N/114-17-00E

0002-1-65038

25X1

3. POSSIBLE "T-43" CLASS MSF U/C

COVERED BUILDING WAY

U/I OBJECT
(LOA APPROX: 260')

POSSIBLE SS
(LOA APPROX: 250')

FIGURE 58

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TOP SECRET

25X1

25X1

25X1
25X

TOP SECRET

Approved For Release

2004/05/05 : CIA-RDP78T0516

000600010002-1

CIA/PTR-65038

25X1

WU-CHANG, CHINA
30-31-55N/114-17-00E

POSSIBLE SS
(LOA APPROX. 250')

U/I SURFACE VESSEL
(LOA APPROX. 210')

U/I OBJECT
(LOA APPROX. 260')

25X1

FIGURE 59

Approved For Release 2004/05/05 : CIA-RDP78T0516

000600010002-1

TOP SECRET

X1
X1

25X1

25X1 TOP SECRET

Approved For Release 2004/05/05 : CIA-RDP78-05161A000600010002-1

WU-CHANG, CHINA
30-31-55N/114-17-00E

CTA/PIR-65038

25X1

COVERED BUILDING WAY

U/I OBJECT
(LOA APPROX. 260')

FIGURE 60

25X1

25X1

25X1

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TOP SECRET

25X1
25X1

TOP SECRET

Approved For Release 2004/05/05 : CIA-RDP78T05161A000600010002-1

CTA/PTB 65028

25X1

WU-CHANG, CHINA
30-31-55N/114-17-E

U/I VESSEL
(LOA APPROX. 210')

POSSIBLE SS

FIGURE 61

25X1

Approved For Release 2004/05/05 : CIA-RDP78T05161A000600010002-1

TOP SECRET

25X1
25X1

25X1

25X1 TOP SECRET

Approved For Release 2004/05/05 : CIA-RDP76-00500A000600010002-1

STA/PTR-65038

WU-CHANG, CHINA
30-31-55N/114-17-00E

25X1

U/I OBJECT
(LOA APPROX. 260')

U/I OBJECT
(LOA APPROX. 260')

FIGURE 62

25X1

Approved For Release 2004/05/05 : CIA-RDP76-00500A000600010002-1

25X1

25X1

TOP SECRET

TOP SECRET